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VOLUME 49



# *SPECIES INTELLIGIBILIS* FROM PERCEPTION TO KNOWLEDGE

VOLUME TWO

*Renaissance Controversies, Later Scholasticism,  
and the Elimination of the Intelligible Species  
in Modern Philosophy*

BY

LEEN SPRUIT



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In memoriam C.W. Mönnich



## CONTENTS

PREFACE .....	XV
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### PART ONE

#### RENAISSANCE CONTROVERSIES

INTRODUCTION .....	3
1. Tradition and innovation .....	4
1.1. The authority of medieval authors and the translations of <i>De anima</i> .....	4
1.2. The (re)discovery of ancient philosophical psychology .....	7
1.3. Immortality of the soul .....	10
2. The <i>status quaestionis</i> .....	11
3. Preview .....	14
VI FROM FLORENCE TO PADUA .....	18
1. Independent and Platonic interpretations .....	20
1.1. Nicholas of Cusa .....	20
1.2. Giovanni Pico della Mirandola .....	29
1.3. Marsilio Ficino .....	32
1.4. Jacques Lefèvre d'Étaples and Charles de Bovelles .....	38
1.5. Girolamo Fracastoro .....	46
2. Early Paduan discussions .....	50
2.1. Nicoletto Vernia .....	52
2.2. Alessandro Achillini .....	56
2.3. Tiberio Bacilieri .....	64
2.4. Cristoforo Marcello .....	67
3. Agostino Nifo .....	71
3.1. The comment on <i>Destructio destructionis</i> .....	74
3.2. The critique of the intelligible species in <i>De intellectu</i> .....	76
3.3. Species and notion in the commentary to <i>De anima</i> .....	84
4. Conclusion .....	89

VII	THE SIXTEENTH-CENTURY DISPUTES .....	93
1.	The turn to tradition in the new defence .....	94
1.1.	Pietro Pomponazzi .....	94
1.2.	Marcantonio Zimara .....	103
2.	Scholastic controversies on abstraction and species .....	110
2.1.	Caietanus .....	111
2.2.	Francesco Sylvester of Ferrara .....	119
2.3.	Crisostomo Javelli .....	124
3.	Intermezzo .....	128
3.1.	Exponents of German Humanism and Aristotelianism .....	128
3.1.1.	John Eck .....	129
3.1.2.	Philipp Melanchthon .....	130
3.1.3.	Vitus Amerbach and Hieronymus Wildenberg .....	132
3.1.4.	Jacob Schegk and George Liebler .....	133
3.2.	The intelligible species assimilated to notion and cognitive act .....	135
3.2.1.	Ludovico Buccaferrea .....	136
3.2.2.	Francesco of Vimercato, Nicola Tignosio and Bassiano Lando .....	139
4.	Opposition renewed .....	143
4.1.	Girolamo Girelli .....	143
4.2.	Simone Porzio .....	150
5.	Conclusion .....	156
VIII	FROM SIMPLICIAN AVERROISM TO THE NEW PHILOSOPHY .....	159
1.	The emanation of the species discussed .....	160
1.1.	Simplicius on noetics and cognition of sensible reality .....	161
1.2.	Marcantonio Genua .....	164
1.3.	Marc'Antonio Mocenigo .....	173
1.4.	Antonio Polo .....	177
1.5.	Teofilo Zimara .....	178
1.6.	Concluding remark .....	184
2.	Reactions to Simplician Averroism .....	184
2.1.	Giulio Castellani .....	186
2.2.	Lucillo Filalteo .....	191
2.3.	Antonio Montecatini .....	192
3.	The intelligible species in the New Philosophy .....	195
3.1.	Introduction—Patrizi .....	197
3.2.	Bernardino Telesio .....	198

## CONTENTS

IX

3.3.	Giordano Bruno .....	203
3.4.	Scipio Agnello .....	213
3.5.	Tommaso Campanella .....	214
3.6.	From Campanella to modern philosophy .....	221
IX	THE LEGACY OF RENAISSANCE ARISTOTELIANISM .....	223
1.	Late representatives of the School of Padua .....	225
1.1.	Jacopo Zabarella .....	225
1.2.	Polo Lauredano and Antonio Scaino .....	237
1.3.	Francesco Piccolomini .....	238
1.4.	Agostino Faba .....	245
2.	En route for the seventeenth-century philosophical library .....	248
2.1.	Species in early textbooks .....	248
2.2.	Scaliger's <i>Exercitationes</i> and Goclenius' first reaction .....	250
3.	Renaissance cognitive psychology: Transition and anticipation .....	254
3.1.	Retrospective survey .....	255
3.2.	Systematic evaluation .....	258
3.2.1.	New views of intelligible species .....	258
3.2.2.	Theories of knowledge acquisition .....	261
3.3.3.	Abstraction and attention .....	262

## PART TWO

### LATER SCHOLASTICISM AND THE ELIMINATION OF THE INTELLIGIBLE SPECIES IN MODERN PHILOSOPHY

	INTRODUCTION .....	267
1.	Scholastic psychology on the Iberian peninsula .....	267
2.	Modern philosophy and the Scholastic psychological tradition .....	269
3.	Preview .....	273
X	RISE AND HEYDAY OF LATER SCHOLASTIC PSYCHOLOGY .....	274
1.	Scholastic psychology from Palacios to Suarez .....	274
1.1.	Michael de Palacios .....	274
1.2.	Petrus Martinez .....	278
1.3.	Francisco Toletus .....	282
1.4.	Domingo Bañes .....	287

1.5.	The College of Coimbra .....	289
1.6.	Francisco Suarez .....	294
1.6.1.	Species and the mental act .....	296
1.6.2.	Nature and function of the species .....	297
1.6.3.	Perceptual and mental acts: the generation of species .....	301
1.6.4.	Abstraction .....	303
1.6.5.	Concluding remark .....	305
1.7.	Conclusion .....	306
2.	From commentary to course .....	307
2.1.	Early seventeenth-century <i>De anima</i> commentaries .....	308
2.1.1.	Francisco Murcia de la Llana .....	308
2.1.2.	Agostino Pallavicini and Michael Zanardus .....	309
2.1.3.	Antonio Rubio .....	311
2.2.	First Scholastic manuals .....	314
2.2.1.	Filippo Fabro .....	314
2.2.2.	Eustachius of Saint-Paul .....	316
2.2.3.	Hieronymus Dandini .....	319
2.2.4.	Pedro Hurtado de Mendoza .....	321
2.2.5.	Raphael Aversa .....	323
2.2.6.	Fortunio Liceti .....	324
2.2.7.	Castelvi and Cottunius .....	326
3.	John of Saint-Thomas and his contemporaries .....	327
3.1.	Rodrigo Arriaga .....	327
3.2.	John of Saint-Thomas .....	330
3.3.	The College of Alcalá .....	334
3.4.	In the shadow of the authoritative masters .....	337
3.5.	A Scotistic controversy .....	341
3.5.1.	John Ponce .....	341
3.5.2.	Bartholomew Mastrius and Bonaventura Belluti .....	345
3.5.3.	A late response to Ponce: Gabriel of Saint-Vincent .....	346
3.6.	Claudio Berigardus .....	348
4.	Conclusion .....	349
XI	MODERN PHILOSOPHY: FROM SPECIES TO IDEA .....	352
1.	Descartes: Innatism and perceptual ideas .....	353
1.1.	The dynamics of sense perception .....	356
1.1.1.	Mind and imagination in the <i>Rules</i> .....	356
1.1.2.	The polemics with the species doctrine in the <i>Dioptric</i> .....	358
1.1.3.	Perceptual knowledge in the <i>Meditations</i> .....	365
1.2.	The origin and nature of perceptual ideas .....	369

# CONTENTS

XI

1.2.1.	Idea: act and content .....	369
1.2.2.	Subjective and objective being: species and ideas .....	372
1.2.3.	The origin of our perceptual ideas: innate and adventitious ideas .....	376
1.2.4.	The historical roots of dispositional innatism .....	379
1.3.	Evaluation .....	386
1.3.1.	Knowledge acquisition .....	386
1.3.2.	Ideas and intelligible species .....	388
2.	Thomas Hobbes: Motion, perception, and ideas .....	390
2.1.	The early Hobbes between Aristotle and Descartes .....	392
2.1.1.	<i>Short Tract</i> : a mechanistic doctrine of species .....	392
2.1.2.	Cartesian optics: a turning point in Hobbes' theory of perception? .....	393
2.2.	The production of perceptual content: Hobbes and the <i>Theaetetus</i> .....	396
2.3.	Hobbes and Scholastic psychology .....	398
2.3.1.	Images and ideas .....	398
2.3.2.	The critique of sensible and intelligible species .....	402
3.	Pierre Gassendi: Epicurean species .....	404
3.1.	Materialism and scepticism .....	405
3.2.	Interpretation and critique of the Scholastic psychology .....	408
3.2.1.	Peripatetic and Epicurean species .....	408
3.2.2.	Simple apprehension: impressed and expressed species .....	410
3.2.3.	The <i>prolepsis</i> or anticipation .....	413
3.2.4.	Intelligible species and ideas .....	414
3.3.	Conclusion: species, anticipation, and idea .....	417
XII	INNOVATION AND ISOLATION .....	420
1.	Scholasticism and Cartesianism in the Netherlands .....	420
1.1.	Philosophical psychology before Descartes .....	421
1.1.1.	Franco Burgersdijk .....	422
1.1.2.	Daniel Sennert .....	425
1.1.3.	Van Isendoorn and Deusing .....	427
1.2.	First reactions to Descartes .....	429
1.2.1.	Adriaan Heereboord .....	429
1.2.2.	Henricus Regius .....	430
1.2.3.	Johannes de Raey .....	432
1.2.4.	Arnold Verhel .....	435
1.3.	Johannes Clauberg .....	436
1.4.	Arnold Geulincx .....	441



1.5.	Spinoza .....	442
2.	Later seventeenth-century Scholastic psychology .....	445
2.1.	Libert Froidmont .....	446
2.2.	Thomas Compton Carleton .....	447
2.3.	Franciscus Soares and George de Rhodes .....	448
2.4.	Ildephonsus Peñafiel .....	449
2.5.	On the isle of the tradition .....	451
3.	Later Cartesian interpretations of the species doctrine .....	453
3.1.	Emanuel Maignan .....	455
3.2.	Louis de la Forge .....	458
3.3.	Desgabets and Du Hamel .....	461
4.	Species in seventeenth-century philosophical lexica .....	464
4.1.	Rudolphus Goclenius .....	464
4.2.	Castanaeus .....	466
4.3.	Micraelius, Scherzer, Godart, and Volckmar .....	468
4.4.	Chauvin .....	470
XIII	LATER CONTROVERSIES ON IDEAS .....	473
1.	Malebranche and Arnauld .....	473
1.1.	Malebranche on ideas of bodies .....	474
1.1.1.	Mind and body—ideas and sensations .....	474
1.1.2.	The rejection of the intentional species .....	477
1.1.3.	The vision in God .....	480
1.1.4.	Ideas: content and representation .....	482
1.2.	Arnauld's early criticisms of Malebranche's view of ideas .....	483
1.3.	A survey of the later debate .....	487
1.4.	Ideas and species: act, representation, and content .....	490
2.	John Locke and his contemporaries .....	496
2.1.	John Locke on perceptual ideas .....	497
2.1.1.	The generation of simple ideas of sensation .....	499
2.1.2.	Ideas in the mind .....	503
2.1.3.	Empirical ideas and intelligible species .....	506
2.2.	An early disciple of Locke: Richard Burthogge .....	513
2.3.	Locke's first critics .....	515
2.3.1.	John Norris and Henry Lee .....	515
2.3.2.	John Sergeant .....	518
3.	Leibniz: Representation, perception, and ideas .....	523
3.1.	Perception, species, and pre-established harmony .....	524
3.2.	Ideas: dispositional and virtual nativism .....	527
3.3.	Perception of the sensible world .....	529

## CONTENTS

XIII

CONCLUSION .....	534
BIBLIOGRAPHY .....	546
INDEX PERSONARUM .....	578



## PREFACE

The discussions in Peripatetic cognitive psychology regarding the intelligible species span a fairly well-delimited period—that is, from the second half of the 13th century until the end of the 17th century. This volume deals with Renaissance controversies, developments of late Scholasticism, and the elimination of the intelligible species in modern non-Aristotelian philosophy. Although references to the first volume, which was devoted to the medieval discussions, are frequent, this second volume can be read as an independent book.

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**PART ONE**

**RENAISSANCE CONTROVERSIES**



## INTRODUCTION

Generally speaking, Renaissance discussions of what is now called cognitive psychology were largely continuous with traditional medieval assumptions, problems and terminology. There were, however, some important differences in outlook and approach, due principally to changes in the interpretation of Aristotle, his Arabic commentators, the Scholastic authorities, and Peripatetic philosophy in general. Also external factors contributed to this change of philosophical climate: in particular the conquest of Padua by Venice in 1405 led to the rise of a new generation of relatively independent, professional philosophers in Northern Italy<sup>1</sup>.

In the second half of the 15th century many classical philosophical works, which had until then remained unknown, were discovered, translated and published, in majority works by (neo-) Platonic and Hellenistic writers. This rediscovery had its effect on the interpretation of Peripatetic philosophy, as numerous non-Aristotelian doctrines and views found their way in the commentaries on Aristotle. During the same period, the invention of printing made available the Greek Aristotle to a large audience of scholars. New philological tools and techniques were developed for interpreting the ancient texts. At the same time, philosophers at North-Italian universities came to highlight the differences between Aristotelian philosophy of mind and theological psychology,

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<sup>1</sup> A. Poppi, *Introduzione all'aristotelismo padovano*, Padova 1970, pp. 13-14; Ch.H. Lohr, "Pomponazzi und die Institutionen seiner Zeit. Methodisches zur geistesgeschichtlichen Forschung", in *Theologie und Philosophie* 49(1974), 535-541, on p. 536. See also J.R. Randall, *The School of Padua and the Emergence of Modern Science*, Padova 1962. For a general discussion of the position of professional scientists at the end of the Middle Ages, see P.O. Kristeller, "Der Gelehrte und sein Publikum im späten Mittelalter und in der Renaissance", in *Medium Aevum*, Festschrift für Walther Bulst, eds. H.R. Sauss & D. Schaller, Heidelberg 1960, 212-230.



as is clear from the controversy about the immortality of human soul, which developed at the University of Padua.

In the first section of this introduction I examine the relation between Renaissance Aristotelian speculation and Scholastic and ancient philosophy. Section two describes in brief outline the plan of the first part of this volume. The final section is a global summary of the Renaissance debate on intelligible species.

## § 1. TRADITION AND INNOVATION

### 1.1. *The authority of medieval authors and the translations of De anima*

Psychological speculation during the Italian Renaissance was strongly influenced by the conceptions of past masters. The works of Averroes, Siger of Brabant, and those of Jandun and his school weighed heavily on the North-Italian disputes<sup>2</sup>. Most singular in this respect was the position of Averroes. Thus, Achillini believed that Averroes had given the only genuine interpretation of Aristotle; at the same time, however, he refused to accept this interpretation because it was incompatible with Catholic faith. Vernia and Nifo started out as regular Averroists, but later in their career, after the Barozzi enactment of 1489, they came to reject Averroism. Yet, even then Nifo apparently retained Averroes' psychology on issues that did not regard the immortality of the soul. From the 1490's onward, however, we find him formally endorsing many un-Averroistic theories, for example with regard to the intelligible species. The first author to formulate an explicit defence of the need for intelligible species on Averroist grounds has probably been Zimara. Marcello and

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<sup>2</sup> B. Nardi, *Studi su Pietro Pomponazzi*, Firenze 1965, p. 105, remarks that Jandun's authority equalled that of Averroes; cf. also E.P. Mahoney, "Jandun of Jandun and Agostino Nifo on human felicity (*status*)", in *L'homme et son univers au Moyen Age*, ed. Ch. Wenin, Louvain-la-Neuve 1986, 465-477. Many authors, however, assumed a thoroughly critical attitude towards Jandun, such as Cristoforo Marcello and Agostino Nifo; see ch. VI, § 2.4 and 3.1. For Siger in the Italian Renaissance, see B. Nardi, *Sigieri di Brabante nel pensiero del rinascimento italiano*, Roma 1945; idem, *Saggi sull'aristotelismo padovano dal secolo XIV al XVI*, Firenze 1958, pp. 313-319.

Girelli, in contrast, borrowed arguments from the Commentator against the theory of intelligible species.

Also Thomas Aquinas and Duns Scotus continued to be authoritative points of reference<sup>3</sup>. At the University of Padua, for example, two chairs were founded for systematic research in the metaphysics of these authors. Another writer of influence was Albert the Great, whose work was intensively studied at the time, and whose doctrines were praised by representatives of the Faculties of Arts<sup>4</sup>. Late in the 15th century Albert's authority was invoked by Vernia and by Pico della Mirandola against the doctrine of intelligible species. The views of William of Ockham significantly shaped the psychology of Achillini and Nifo. At the same time, also the works of Giles of Rome, John Baconthorpe and Gregory of Rimini became available in print, and were much thought of in philosophical circles<sup>5</sup>.

Medieval psychological speculation had in large part depended on the *De anima* translation by William of Moerbeke. Also during the Renaissance this translation remained the key tool in matters psychological, determining the terminological and conceptual framework for discussion. Regarded as an exclusively technical philosophical treatise, *De anima* did not arouse the interest of humanist philologists. No critical edition of it was published comparable to that of *Poetics*, *Rhetorics*, or *Nicomachean Ethics*, for ex-

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<sup>3</sup> See the studies of E.P. Mahoney: "Saint Thomas and the School of Padua at the end of the fifteenth century", in *Proceedings of the American Catholic Philosophical Association. «Thomas and Bonaventure. A Septicentenary Commemoration»*, 48(1974), 277-285; "Duns Scotus and the School of Padua around 1500", in *Regnum hominis et regnum Dei*, vol. II, Roma 1978, 215-227; "Albert the Great and the *Studio Patavino* in the late fifteenth and early sixteenth centuries", in *Albertus Magnus and the Sciences*, ed. J.A. Weisheipl, Toronto 1980, 537-563.

<sup>4</sup> Albert was also popular with Florentine authors; see B.G. McNair, "Albert the Great in the Renaissance: Cristoforo Landino's use of Albert on the soul", in *Modern Schoolman* 70(1993), 115-129.

<sup>5</sup> Agostino Nifo frequently cited Giles of Rome. As we have seen in previous chapters, Giles was a constant point of reference in medieval discussions as well. Pomponazzi referred to Gregory of Rimini in several writings; see "Quaestio de universalibus", in *Corsi inediti dell'insegnamento padovano*, vol. II, ed. A. Poppi, Padova 1970, 103, 127, and 150; "Quaestio de speciebus intelligibilibus", in *idem*, 206. For the position and fame of John Baconthorpe in Padua, see Nardi, *Sigieri di Brabante e il pensiero del rinascimento italiano*, 105-113. Other authors, such as Gabriel Biel and Durandus, reappeared in the epistemological debate with the rise of Spanish Scholasticism.

ample. Translations by others were either rarely used, such as that by George of Trebizond, or, even when they were widely used and often reprinted, such as the translation by Argyropoulos, they failed to replace William's terminological apparatus<sup>6</sup>. Indeed, it is surprising to note that Argyropoulos' translation—which in the crucial passages of *De anima* translated the Greek *eidos* as “forma” instead of the traditional “species”—rapidly spread among Jesuit institutes for theological instruction<sup>7</sup>, while Jesuit scholars almost unanimously stressed the need for intentional species in intellectual knowledge<sup>8</sup>.

In the course of the 16th century at least five new Latin translations of *De anima* appeared<sup>9</sup>. These translations did not achieve the influence enjoyed by those of Moerbeke or Argyropoulos, however. The elegant Ciceronian version by Joachim Périon, for example, was clearly the product of the new humanist approach. It is not very precise in its terminology, and, to the best of my knowledge, it was used only in Agostino Faba's commentary on *De anima*<sup>10</sup>. Interestingly, Périon translated *eidos* as “species”, while Faba used “forma” and “species” interchangeably<sup>11</sup>.

Obviously, the use of one translation does not preclude that of another. Medieval commentaries were frequently printed in combination with different translations. Also, it was not uncommon for new commentaries to use both old and new translations<sup>12</sup>. In

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<sup>6</sup> F.E. Cranz, “The Renaissance reading of the *De anima*”, in *Platon et Aristote à la Renaissance*, Paris 1976, 359-376, on pp. 360-62. On the philological Aristotle translations of Bessarion, Gaza, and Lefèvre d'Étaples, see also Ch.B. Schmitt, “Towards a reassessment of Renaissance Aristotelianism”, in *History of Science* 11(1973), 159-193, pp. 168-9. For a general orientation on the Aristotle translations during the Renaissance, see Ch.B. Schmitt, *Aristotle and the Renaissance*, Cambridge (Ma.) 1983, ch. III.

<sup>7</sup> Cranz, “The Renaissance reading of the *De anima*”, 364.

<sup>8</sup> See ch. X and XII.

<sup>9</sup> See K. Park & E. Kessler, “The concept of psychology”, in *Cambridge History of Renaissance Philosophy*, eds. Ch. Schmitt and Q. Skinner, Cambridge 1988, 455-463, on p. 458, note 15.

<sup>10</sup> Agostino Faba, *In tres libros Aristotelis De anima praeclarissima commentaria*. Nunc primum in lucem edita Ioachimo Perionio translatore, Savigliano 1596, Taurini 1597.

<sup>11</sup> For discussion, see ch. IX, § 1.4.

<sup>12</sup> In particular with erudite authors; see, for example, the *De anima* commentaries of Francesco of Vimercato and Antonio Montecatini. For their position on intelligible species, see ch. VII, § 3.2.2, and ch. VIII, § 2.3, respectively.

fact, although many academic philosophers came to accept Argyropoulos' version of *De anima* as the new standard translation, it was often accompanied by Moerbeke's version in Renaissance commentaries<sup>13</sup>.

## 1.2. *The (re)discovery of ancient philosophical psychology*

Recent studies have made it abundantly clear that the translations of the works of Alexander of Aphrodisias and of Simplicius contributed significantly to the formation of new conceptual frameworks and to the introduction of new perspectives in psychology and epistemology<sup>14</sup>. Alexander's *De anima*, in the translation of Gerolamo Donato, was published at the end of the 15th century<sup>15</sup>. Simplicius' commentary on *De anima*, either in Greek or in some translation unknown to us, was known to Giovanni Pico della Mirandola, Agostino Nifo, Nicoletto Vernia and others<sup>16</sup>. It became available in Latin through Faseolo's translation in 1543<sup>17</sup>, and was to be reprinted in a revised translation<sup>18</sup>.

<sup>13</sup> F.E. Cranz, "Editions of the Latin Aristotle accompanied by the commentaries of Averroes", in *Philosophy and Humanism*, ed. E.P. Mahoney, Leiden 1976, 116-128, on pp. 127-28.

<sup>14</sup> See, in particular, the studies of Nardi and Mahoney, discussed below.

<sup>15</sup> Alexander Aphrodisiensis, *De anima*, Venetiis 1495. His *De intellectu*, already translated during the Middle Ages, was translated again and printed in 1546; for further information, see F.E. Cranz, "Alexander Aphrodisiensis", in *Catalogus translationum et commentariorum*, ed. P.O. Kristeller, vol. I, Washington 1960, 77-135, on pp. 85-86.

<sup>16</sup> See B. Nardi, "Il commento di Simplicio al *De anima* nelle controversie della fine del secolo XV e del secolo XVI", in *Saggi sull'aristotelismo padovano*, 365-442, on pp. 366f and 379.

<sup>17</sup> For an extensive analysis of the influence of Simplicius' commentary on the psychological debate in Italy, see the aforementioned essay of Nardi, "Il commento di Simplicio al *De anima* nelle controversie della fine del secolo XV e del secolo XVI", and E.P. Mahoney, "The Greek commentators Themistius and Simplicius and their influence on Renaissance Aristotelianism", in *Neoplatonism and Christian Thought*, ed. D.J. O'Meara, Albany 1982, 170-177 and 261-282. I do not examine the authenticity of Simplicius' commentary, challenged by F. Bossier & C. Steel, "Priscianus Lydus en de *In de anima* van Pseudo(?) -Simplicius", in *Tijdschrift voor Filosofie* 34(1972), 761-821 (French summary, 821-22). However, Simplicius' authorship had already been questioned by Francesco Piccolomini; see also B. Nardi, o.c., 431-432.

<sup>18</sup> *Commentaria Simplicii profundissimi et acutissimi philosophi in tres libros de anima Aristotelis*, de graeca lingua in latinam nuperrimè translata, Evangelista Lungo Asulano interprete, Venetiis 1564. Asulano drew attention to the many errors in Faseolo's translation in a notice printed on the frontespice.

Alexander's views only tangentially influenced the discussion on intelligible species<sup>19</sup>. Also the commentary on *De anima* attributed to Philoponus, whose Latin translation appeared in 1544, had no direct bearing on the species debate<sup>20</sup>. Simplicius' *De anima*, by contrast, significantly influenced 16th-century psychological disputes, and it played a crucial role in the elaboration of a Neoplatonic doctrine of species<sup>21</sup>.

The discovery and publication of the works of other ancient writers, in particular Hellenistic ones, did not influence Peripatetic psychological discussion to the same extent as Neoplatonic commentaries. Thus, the texts of ancient scepticism gradually spread in Italy in the course of the fifteenth and sixteenth centuries. They often served only as a source of historical and philological information, without provoking any philosophical discussion. Philosophical scepticism took root principally in Northern Europe after the integral Latin edition of Sextus Empiricus in the 1560's<sup>22</sup>. There are no indications, however, that scepticism was conveyed by the Aristotelian tradition<sup>23</sup>. Although the discovery of Sextus' works did in fact give rise to a new philosophical current, his views did not influence Peripatetic cognitive psychology as such<sup>24</sup>. Scepticism was also marginal in the disputes

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<sup>19</sup> The divergent opinions on the species among Alexandrist-inspired authors, such as Porzio, Castellani, and Zabarella, did not regard specifically Alexandrist views; cf. ch. VII, § 4.2, ch. VIII, § 2.1, and ch. IX, § 1.1, respectively.

<sup>20</sup> We now have Stephanus of Alexandria's exposition of *De Anima* III in the transmitted text of Philoponus' commentary, while Philoponus' own survives only in the 13th-century Latin translation by William of Moerbeke, and only for ch's 4-8; cf. H. Blumenthal, "John Philoponus and Stephanus of Alexandria: Two Neoplatonic Christian commentators on Aristotle?", in *Neoplatonism and Christian Thought*, ed. D.J. O'Meara, Albany 1982, 54-63, and 244-46; see also ch. I, § 4.3.

<sup>21</sup> See, in particular, the position of Marcantonio Genua and some exponents of his school, examined in ch. VIII, § 1.

<sup>22</sup> See Ch.B. Schmitt, *Cicero scepticus. A Study of the Influence of the Academia in the Renaissance*, The Hague 1972, 109 and 132; and Ch.B. Schmitt, "The rediscovery of ancient skepticism in modern times", in *The Skeptical Tradition*, ed. M. Burnyeat, Berkeley-London 1983, 225-251, on p. 236.

<sup>23</sup> Jacob Schegk (1511-1587), for example, was aware of some of the central teachings of the ancient sceptical schools, but remained highly critical; for discussion of his position, see ch. VII, § 3.1.4.

<sup>24</sup> See R. Popkin, *The History of Scepticism from Erasmus to Descartes*, Assen 1960, pp. 17-19, and 34. For the penetration of sceptical ideas derived from Cicero's writings, see also Ch.B. Schmitt, *Cicero Scepticus*. For the diffusion of

on technical epistemological issues discussed in the Platonic schools<sup>25</sup>.

Conversely, authors influenced by the sceptical tradition were not particularly interested in specifically Aristotelian problems in psychology and epistemology. At best they deployed sceptical arguments to fight Aristotelianism, as in the case of Gianfrancesco Pico<sup>26</sup>. Apparently, however, the latter accepted without any problem the view that empirical knowledge makes use of species. He questioned the idea that sense perception as such is a sufficient basis for knowledge, rather than the specific mechanisms involved in sense perception and in the acquisition of sense-dependent knowledge<sup>27</sup>. Gianfrancesco challenged the epistemological implications drawn by the 'dogmatists' of his days from their causal understanding of perception and cognition, but he did not take issue with that understanding itself. According to Gianfrancesco Pico's interpretation of Sextus Empiricus, the physical composition of the body is subject to constant change. Hence, if knowledge is based on the operation of the bodily senses, the species once received will also change as the composition of the body changes<sup>28</sup>.

The case is slightly different with regard to other Hellenistic schools, such as Epicureanism and Stoicism. Diogenes Laertius, who together with Sextus was the main source for Stoic texts, was known already in the Middle Ages<sup>29</sup>. Although typically Stoic con-

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Sextus Empiricus' works during the Middle Ages and the Renaissance, see W. Cavini, "Appunti sulla prima diffusione in Occidente delle opere di Sesto Empirico", in *Medioevo* 3(1977), 1-20.

<sup>25</sup> As a matter of fact, also Ficino was not particularly interested in scepticism; cf. Ch.B. Schmitt, *Cicero scepticus*, p. 52.

<sup>26</sup> Ch.B. Schmitt, *Gianfrancesco Pico della Mirandola (1469-1533) and His Critique of Aristotle*, The Hague 1967. Gianfrancesco's *Examen vanitatis* (1520) caused little immediate reaction.

<sup>27</sup> *Examen vanitatis doctrinae gentium, et veritatis christianae disciplinae*, Mirandola 1520; I have consulted the Basel edition of 1601. Gianfrancesco referred to sensible species on pp. 128v and 189v. On p. 190v, he discussed the problematic relation between the phantasms and the intellect. On this same page, Gianfrancesco referred to his commentary on *De anima*. Ch. Lohr, *Latin Aristotle commentaries*, vol. II: *Renaissance Authors*, Firenze 1988, p. 343, suggests that the extant *De immortalitate animae digressio* (Bononiae 1523) is possibly a fragment of this commentary.

<sup>28</sup> For discussion, see Ch.B. Schmitt, *Gianfrancesco Pico della Mirandola (1469-1533) and His Critique of Aristotle*, 86-96.

<sup>29</sup> See J.T. Muckle, "Greek works translated directly into Latin before 1350 (continuation)", in *Mediaeval Studies* 5(1943), 102-114, on p. 110.

ceptions certainly influenced Renaissance discussions of psychology and epistemology, it is difficult to judge the exact extent to which they did<sup>30</sup>. Epicurus' psychological views were to become a source of inspiration only for Gassendi<sup>31</sup>.

### 1.3. *Immortality of the soul*

An important flaw in the history of psychological discussions at Padua was caused by the controversy on the immortality of the human soul, which led to the episcopal and papal condemnations of 1489 and 1513<sup>32</sup>. These enactments did not succeed in restraining philosophical debate altogether; yet, they led to significant changes in the philosophical outlook of many writers. Nicoletto Vernia and Agostino Nifo, for example, publicly denounced their earlier view that Averroes was the most authoritative interpretator of Aristotle's psychology. This did not mean that they gave up all (allegedly) Averroistic doctrines. Yet, in the case of Nifo, for example, the denouncement induced a remarkable reconsideration of his initial polemics against the doctrine of intelligible species<sup>33</sup>.

Already in 1510, Caietanus stated in his commentary on the *De anima* that the immortality of the soul cannot be demonstrated with philosophical arguments derived from Aristotle. He proposed instead a demonstration based on Platonic views<sup>34</sup>. The debate ensu-

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<sup>30</sup> Melanchton and Marcantonio Zimara were acquainted with Stoic views. Rightly, Ch.B. Schmitt remarks in "Towards a reassessment of Renaissance Aristotelianism", on p. 171, that the influence of Stoicism and atomism in the Aristotelian disputes still remains to be studied thoroughly.

<sup>31</sup> See Part II, ch. XI, § 3.

<sup>32</sup> For Bishop Pietro Barozzi's edict and the condemnation of the doctrines of Alexander and Averroes by the Pope in 1513, see E. Gilson, "L'affaire de l'immortalité de l'âme à Venise au début du XVI<sup>e</sup> siècle", in *Umanesimo europeo e umanesimo veneziano*, Firenze 1960, 31-61; A. Poppi, *Introduzione all'aristotelismo padovano*, 27; F. Lucchetta, "Recenti studi sull'averroismo padovano", in *L'averroismo in Italia*, Roma 1979, 91-120, on pp. 113f.

<sup>33</sup> At other times, the authors involved in the debate on the immortality of the intellectual soul did not contribute significantly to the issue under scrutiny; cf., for example, Gasparo Contarini, *De immortalitate animae adversus Petrum Pomponatium*, in *Opera*, Venetiis 1589, 177-231, on pp. 201f, where intelligible species and form are used interchangeably.

<sup>34</sup> See B. Nardi, *L'alessandrisimo nel Rinascimento*, Roma 1950, 136-139; E. Gilson, "L'affaire de l'immortalité de l'âme", 41-42. In his attitude towards Aristotle, Caietanus, in a certain sense, endorsed the position of Bessarion; see Nardi, *L'alessandrisimo*, 112-117.

ing the publication of Pomponazzi's *De immortalitate animae* in 1516 led other authors to a more profound reconsideration of the intrinsic value of Aristotle's philosophy. Crisostomo Javelli, for example, although certainly not adhering to any form of anti-Aristotelianism, came to the conclusion that Aristotle and philosophy were no longer the same<sup>35</sup>.

## § 2. THE STATUS QUAESTIONES

The Renaissance has often been characterized as a complicated and confused period<sup>36</sup>. It is true that the diversity of the philosophical material collected from different schools and from different traditions, makes it sometimes difficult to determine what the position of any given author has been. This is doubtless the reason why many modern attempts to reconstruct Renaissance debates are prone to remain tentative, fragmentary and incomplete<sup>37</sup>.

Over the past two or three decades, several critical studies have been published discussing the problem of the intelligible species in the works of Renaissance authors. In general, however, these studies tend to concentrate on a small number of authors only, as in the works of A. Poppi or E.P. Mahoney<sup>38</sup>. Also the essays by Nardi, Cranz and others contain incidental remarks on the issue. From a methodological point of view, however, their approach is not always unbiased<sup>39</sup>. Other studies, notably including that of

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<sup>35</sup> "Philosophia Aristotelis et philosophia ut philosophia non convertuntur." Cf. E. Gilson, "L'affaire", 51-52; Nardi, *L'alessandrismo*, 142. The view of a distinction between natural philosophy and Aristotle is traced in Taia Pietra by G. Di Napoli, *L'immortalità dell'anima nel Rinascimento*, Torino 1963, on p. 201. For a similar distinction, see also Durandus of Saint-Pourçain, examined in ch. IV, § 2.1.

<sup>36</sup> Cf. E. Cassirer, *Das Erkenntnisproblem in der Philosophie und Wissenschaft der neueren Zeit*, Band I, Berlin 1911, 13: Renaissance philosophy does not show a logical development.

<sup>37</sup> See K. Park & E. Kessler, "The concept of psychology", p. 463.

<sup>38</sup> A. Poppi, "La discussione sulla «species intelligibilis» nella scuola padovana del Cinquecento", in idem, *Saggi sul pensiero inedito di Pietro Pomponazzi*, Padova 1970, 141-194, examines the positions of Pomponazzi, Marcantonio Zimara, Girelli and Zabarella; E.P. Mahoney analyzes those of Antonio Trombetta and the early Nifo in "Antonio Trombetta and Agostino Nifo on Averroes and intelligible species: A philosophical dispute at the University of Padua", in *Storia e cultura nel Convento del Santo a Padova*, ed. A. Poppi, Vicenza 1976, 289-301.

<sup>39</sup> For example, Nardi and Cranz are convinced of the redundancy of the species. See: B. Nardi, *Problema della verità. Soggetto e oggetto del conoscere*



Skulsky, betray a defective knowledge of the historical background of the problem<sup>40</sup>. The following chapters will draw principally on the work of Poppi and Mahoney, and on the useful remarks made by Kessler in his essay on the intellectual soul in Renaissance philosophy<sup>41</sup>. I shall rarely directly challenge the accounts given by these authors. Rather, my intention is to go beyond them toward a more comprehensive history of the problem.

As intimated earlier, the influence of Neoplatonic Aristotle commentators caused violent contrasts within the Aristotelian camp, dividing it in orthodox Averroists, 'Sigerians', Alexandrists, anti-Averroists, Simplicians, and so forth<sup>42</sup>. In order to develop a more complete view of the Renaissance development of the species controversy, it is necessary to analyse the problem of the intentional species in terms of a more comprehensive frame of reference. Thus, although the Academy of Florence and the Studio Patavino developed along apparently independent lines, mutual contacts and influences can be traced at the epistemological level. Also, the texts of Plato and Plotinus, like those of Marsilio Ficino and Pico della Mirandola, were rarely included in university curricula<sup>43</sup>; yet, they were commonly invoked in discussions of man's cognitive functions<sup>44</sup>. Conversely, authors

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*nella filosofia antica e medievale*, Roma 1951, cap. III-IV; idem, *Saggi sull'aristotelismo padovano*, 231-33, and 328; F. E. Cranz, "The Renaissance reading of the *De anima*", 366-68, 370, and 373.

<sup>40</sup> H. Skulsky, "Paduan epistemology and the doctrine of the one mind", in *Journal of the History of Philosophy* 6(1968), 341-361, identifies, on pp. 345-46, the intelligible species with ideas.

<sup>41</sup> E. Kessler, "The intellective soul", in *The Cambridge History of Renaissance Philosophy*, 485-534.

<sup>42</sup> It is hard to distinguish between 'pure' currents or schools, however; see, for instance, E.P. Mahoney, "Nicoletto Vernia and Agostino Nifo on Alexander of Aphrodisias: An unnoticed dispute", in *Rivista critica di storia della filosofia*, 23(1968), 268-296, for two diametrically opposed views on Alexander.

<sup>43</sup> Platonic philosophy was considered with a certain sympathy by many German authors, such as Melanchthon (see ch. VII, § 3.1), but it was rarely taught at universities. In France it was more successful, and in Italy chairs for Platonic philosophy were instated at the universities of Pisa and Ferrara, and, at the turn of the century, at the "Sapienza" in Roma, and in Pavia. See Ch.B. Schmitt, "L'introduction de la philosophie platonicienne dans l'enseignement des universités à la Renaissance", in *Platon et Aristote à la Renaissance*, Paris 1976, 93-104.

<sup>44</sup> Ch.B. Schmitt, "Philosophy and science in sixteenth-century universities", in *The Cultural Context of Medieval Learning*, eds. J.E. Murdoch & E.D. Sylla,

such as Cusanus, Ficino and Pico contain surprisingly original elaborations of Peripatetic doctrines. Examples like these show that a study of the works of non-Aristotelian authors may significantly contribute to our understanding of the various divisions within the Aristotelian camp.

The issue of the intelligible species is a perfect example of cross-influences between doctrinal currents in Renaissance philosophy. Nature and function of mental representation, containing information about sensible reality, were discussed by Aristotelians as well as by Platonists; their rejection or acceptance of the intelligible species was apparently not determined by any specific school doctrine. In keeping with this finding, I shall also discuss the reflection of Neoplatonic and other non-Aristotelian Renaissance authors on Peripatetic cognitive psychology, analysing not only the doctrines of Neoplatonic Aristotelians such as Marcantonio Genua, but also the works of full-blooded Platonists such as Ficino, and anti-Peripatetic polemicists such as Bernardino Telesio, Giordano Bruno, and Tommaso Campanella<sup>45</sup>.

During the Renaissance virtually all classical and medieval authorities became available in print. As a result of this development, the conceptual stratification of psychological discussion, which had already been highly complex in the Middle Ages, tended to increase by orders of magnitude. In order to give a clear picture of the intricate ramifications and the multilayered development of the debate on species, I have renounced in part the chronological order of the authors to be discussed. On the other hand, however, the grouping of authors in the following chapters is not meant to suggest that any definite doctrinal classification is achieved.

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Dordrecht-Boston 1975, 485-530, on p. 494; cf. E.P. Mahoney, "The Greek commentators", cit., pp. 170-71, for Vernia's and Nifo's acquaintance with Ficino's translations. As a rule, Ficino's translation of Plotinus was published together with his own commentary.

<sup>45</sup> For the influence of Aristotelian views on the psychological and epistemological thought of Platonic and other non-Aristotelian authors, see: B. Nardi, *Sigieri di Brabante*, cap. IV, § 4, concerning the Averroistic background of Pico's mysticism; A.B. Collins, *The Secular is Sacred. Platonism and Thomism in Marsilio Ficino's Platonic Theology*, The Hague 1974; and also my own *Il problema della conoscenza in Giordano Bruno*, Napoli 1988.

## § 3. PREVIEW

Contributors to Renaissance discussions on the intelligible species can be divided in three rough classes, namely, Peripatetics, Neoplatonics, and a group of relatively independent authors, who most of the time were not attached to a university. Members of these classes developed their views along doctrinal lines that were sometimes convergent, and at other times chronologically discontinuous.

The renewed interest in problems of cognitive psychology is testified most clearly by the debates among professional Peripatetic philosophers and among Scholastic authors. Representatives of these factions often repeated medieval views and ideas. Yet, generally speaking, they also sought to apply new philosophical arguments and newly developed philological methods to defend (or to question, as the case may be) the intelligible species. By the turn of the 15th and the 16th century the Peripatetic camp was divided by profound controversies, as it had also been at the peak of the medieval debate<sup>46</sup>. Some authors, such as Achillini and Bacilieri, were openly skeptical about the need for intelligible species, yet without attacking the doctrine head-on. Other philosophers, such as Agostino Nifo, were of an essentially vexed disposition, endorsing the notion of intelligible species only as the outcome of their tardy refutation of Averroist noetics. During the first decade of the 16th century, these ambivalent positions elicited an explicit defence of the species by Pomponazzi and Marcantonio Zimara, who in turn induced the opposition by Girelli and Porzio during the 1540's and 50's<sup>47</sup>.

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<sup>46</sup> Most Aristotle anthologies expounded the doctrine of intelligible species as a genuine Aristotelian teaching, however. See *Dicta notabilia Aristotelis, et aliorum philosophorum alphabetico ordine cum insigni interpretatione Venerabilis Bedae presbyterii*, Venetiis 1552, 53v, 58v, and 61v; *Aristotelis et philosophorum complurium aliorum Sententiae*, Basileae 1541, 106 and 108. For discussion of these anthologies, see Ch.B. Schmitt, "Auctoritates, Repertorium, Dicta, Sententiae, Flores, Thesaurus, and Axiomata: Latin Aristotelian Florilegia in the Renaissance", in *Aristoteles. Werk und Wirkung*, Paul Moraux gewidmet, ed. J. Wiesner, Berlin-N.Y. 1985-1987, vol. II, 515-537. For medieval precursors, see J. Hamesse, *Les auctoritates Aristotelis. Un florilège médiéval*, étude historique et édition critique, Louvain-Paris 1974, (written probably between 1267-1325); cf. also ch. III, § 2.1.

<sup>47</sup> See ch. VI, § 2-3, and ch. VII, § 1 and 4.

Unlike the professional philosophers, the precursors of the Second Scholasticism, such as Caietan and Ferrara of Sylvester, did not question the concept of the intelligible species as such. Their aim was rather to clarify some problematic aspects of it, with particular attention to the relation between agent intellect and sensory representation<sup>48</sup>.

As a reflection on the first authoritative masters of Renaissance Aristotelianism, and sometimes in reaction to Neoplatonizing interpretations of Peripatetic psychology, from the 40's onward a number of moderate positions developed. These authors generally displayed impressive erudition, and at times showed Alexandrist sympathies<sup>49</sup>. As an alternative to the doctrine of intelligible species, some Renaissance Peripatetics took up a suggestion made by Nifo, namely, to conceive of the intelligible species as "notio"<sup>50</sup>. This decision was much more than a philological reorientation with regard to Aristotle's text. At the doctrinal level it entailed a tendency to detach the reflection about representational entities or principles from the physicalist framework of Aristotelian psychology. Thus, it paved the way for a theory of mental content and its linguistic expression that is able to skirt the ontological issue of the species' exact nature<sup>51</sup>.

To be counted among the group of Neoplatonics were not only 15th-century authors such as Ficino and Pico, but also Simplician Averroists such as Marcantonio Genua and his school. Ficino and Pico merit our attention because of their attempt to integrate conceptions of Scholastic authorities, such as Thomas Aquinas, within an essentially Neoplatonic framework. This type of reflection prepared the way for the ultimate substitution of the intelligible species by the concept of 'idea' in early modern, 17th-century philosophy. Noteworthy in this context is Cusanus' project of a mechanistic-like theory of sense perception in combination with a conception of the generation of (conscious) intellectual knowledge as occasioned by sensory stimuli. This type of theory will later

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<sup>48</sup> See ch. VII, § 2.

<sup>49</sup> See ch. VII, § 3.2, ch. VIII, § 2, and IX, § 1.

<sup>50</sup> See ch. VI, § 3.3; but see already John Hulshout of Malinas' *Tractatus de homine*, 454, quoted in ch. V, § 2.4.

<sup>51</sup> See ch. VII, § 3.2.

return in modern authors like Descartes. 'Occasionalistic' positions were also held by Platonics such as Ficino and Genua, but they combined them with different views on the mind's relation to the senses, and on sense perception as such<sup>52</sup>. Genua's *De anima* commentary was a unique attempt at harmonizing the noetics and psychology of Averroes and Simplicius. This work was perhaps the last great foundational design for an innatist cognitive psychology, inspired by and grounded upon the 'classical tradition'.

The preceding paragraph implicitly reckoned Cusanus among the Platonic camp. With respect to his methodology and his doctrinal innovations in the field of cognitive psychology and epistemology, however, he is better seen as one of the first modern philosophers. Other early attempts to reflect on the problem of formal mediation in intellectual cognition, relatively independent of school tradition, can be found in Charles de Bovelles and Fracastoro<sup>53</sup>. After Cusanus, no genuinely revolutionary attempts were made to solve the problem of knowledge acquisition until Bernardino Telesio, whose rigorous naturalism constituted the first non-Platonic alternative to Aristotelian psychology. Among the later independents was also Giordano Bruno. In terminology and conceptual setting, however, his psychology did not break with the traditional schools as violently as that of Telesio<sup>54</sup>.

As mentioned earlier, psychological discussions in the Renaissance bear intricate relations to both their predecessors in the Middle Ages and to their successors in the non-Aristotelian psychology developed in the first half of the 17th century. The dependency of Renaissance psychology on medieval heritage is now generally accepted. In the past few decades several valuable studies have been devoted to this subject<sup>55</sup>. Above I hinted at a point of resemblance between Cusanus and Descartes. Generally speaking,

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<sup>52</sup> See ch. VI, § 1, and ch. VIII, § 1.

<sup>53</sup> See ch. VI, § 1.

<sup>54</sup> See ch. VIII, § 3.

<sup>55</sup> In general, Averroes seemed to take the place of privileged theological authorities such as Augustine. However, as we have seen in section 1, above, Scholastic authors such as Thomas, Scotus and Giles remained important points of reference. Moreover, also Jandun and Baconthorpe were frequently cited. By contrast, Ockham, Durandus, Olivi and Aureol did not reappear in the species discussion until the rise of the Second Scholasticism in the second half of the 16th century.

such relationships are indicative of Renaissance influences on the spiritual setting from which sprang early modern psychologies. Yet, the exact influence of Renaissance psychology on modern, 17th-century cognitive psychology is difficult to trace. This is not the place to enter into a detailed discussion of the historical and methodological problems facing an inquiry of the relations between Renaissance and 17th-century philosophical psychology<sup>56</sup>. For present purposes, one point should be stressed, however. As a rule, non-Scholastic philosophers of the 17th century had no direct acquaintance of the primary sources of Renaissance and medieval philosophy. For their information they relied mostly on the work of authoritative later schoolmen, mostly Spanish writers such as Suarez and Toletus. Alternatively, they relied on omnicomprehensive commentaries such as that of the Conimbricenses, or on more concise Scholastic manuals such as that of Eustachius of Saint-Paul. In chapter nine, section two, I briefly discuss the historical origins of the Scholastic textbook, and describe the impact of early 16th-century philosophical manuals on the transmission of the doctrine of intelligible species.

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<sup>56</sup> These problematics will be discussed in Part II, examining the Second Scholasticism and the elimination of the intelligible species in modern philosophy.

## CHAPTER SIX

### FROM FLORENCE TO PADUA

In a study of the debate on the intelligible species in Renaissance philosophy, it may seem strange to start with the writings of Platonic and independent philosophers, such as Marsilio Ficino, Pico della Mirandola, Nicholas of Cusa and Girolamo Fracastoro. This choice, however, is motivated by various considerations. Indisputably, the main controversies on intelligible species took place among Aristotelian philosophers. Yet, various connections between Neoplatonic and Peripatetic psychology affected this issue. Many Renaissance Peripatetics were heavily influenced by Neoplatonic doctrines deriving from Hellenistic and Arabic commentators. Ficino's translations of Plato and Plotinus were well known in the sixteenth century, also in Padua, as were the works of Pico. Conversely, the authors mentioned above did not reject the medieval Scholastic tradition as such. Thus, Cusanus was probably influenced by Albert's noetics, while Pico attempted to harmonize Peripatetic and Platonic thought, defending against Barbaro the "stylus parisiensis" in philosophy<sup>1</sup>. Ficino, moreover, assimilated many of Thomas' metaphysical and epistemological conceptions<sup>2</sup>. As we have seen in earlier chapters, various nativist versions of the species doctrine could be found in the Scholastic tradition of the Middle Ages<sup>3</sup>. In point of fact, Ficino's and Pico's

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<sup>1</sup> Pico della Mirandola, *Epistola Hermolao Barbaro suo s.*, in *Prosatori latini del quattrocento*, ed. E. Garin, Milano-Napoli 1952, 804-822. On this letter, see E. Garin, "Le interpretazioni del pensiero di Giovanni Pico", in *L'opera di Giovanni Pico della Mirandola nella storia dell'umanesimo*, Firenze 1958, 3-31.

<sup>2</sup> Cf. A.D. Collins, *The Secular is Sacred. Platonism and Thomism in Marsilio Ficino's Platonic Theology*, The Hague 1974.

<sup>3</sup> In particular in authors active at the beginning of the 13th century; also James of Viterbo, Henry Bate and Dietrich of Freiberg must be mentioned here. It should be borne in mind, however, that the Augustinian-inspired nativism was based on the activism of the soul, and that it did not postulate innate contents.

interpretations of the "species intelligibilis" may be seen as original elaborations of medieval views in the context of Neoplatonic metaphysics<sup>4</sup>. As these considerations indicate, it is both relevant and expedient to study how fifteenth-century Platonics dealt with the typically Peripatetic notion of intelligible species, which was already present in their sources (albeit in a different doctrinal setting)—not only in the original Latin works of Macrobius and Calcidius, but also in the medieval translations of Greek Platonics<sup>5</sup>.

Of the authors to be examined in the first section, the most influential was doubtless Marsilio Ficino. His writings were to be cited by many Renaissance authors and, later, also by Spanish schoolmen. To a somewhat lesser degree the same was true of Pico, while Cusanus, in contrast, was rarely referred to<sup>6</sup>. The heritage of Florentine Platonism was received by Charles de Bovelles in France, and by Girolamo Fracastoro in Italy<sup>7</sup>. Each in their own way, these authors addressed the problem exposed by the species theory, namely, that of formal mediation in intellectual knowledge.

In the second section of this chapter, I turn to those Paduan philosophers whose scholarly activity covered the turn of the century, while the last section will be devoted to the development of Nifo's thought on the intelligible species. The wavering and sometimes contradictory positions developed by these authors eventually prepared the way for the dispute between Pomponazzi, Zimara, Girelli and others in the next century.

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<sup>4</sup> Also in humanist authors such as Argyropoulos, the medieval schemes for reading Aristotle's *De anima* persisted; cf. E. Garin, "Testi minori sull'anima nella cultura del 400 in Toscana", in *Archivio di Filosofia* 21(1951), 1-36, on pp. 30-31; see also V. Brown, "Giovanni Argiropulo on the agent intellect: An edition of ms. Magliabecchi V 42 (ff. 224-228v)", in *Essays (...) A.C. Pegis*, ed. J.R. O'Donnell, Toronto 1974, 160-175.

<sup>5</sup> See ch. I, § 4, for the presence of the term "species intelligibilis" in classical Latin authors and in the medieval translations of Greek works.

<sup>6</sup> Exceptions are John Eck and Giordano Bruno; see, however, also Charles de Bovelles.

<sup>7</sup> Ficino strongly influenced Bruno and Patrizi, too; cf. ch. VIII, § 3.2. In Germany, as we shall see in the next chapter, the reborn Platonism would influence John Eck and Philip Melancthon.



## § 1. INDEPENDENT AND PLATONIC INTERPRETATIONS

1.1. *Nicholas of Cusa*

Nicholas de Cusa<sup>8</sup> was the first modern philosopher to break with the medieval schemes and literary forms in which epistemological problems had been discussed since the beginning of the thirteenth century<sup>9</sup>. Without completely rejecting traditional medieval conceptions, Cusanus sought to devise a new framework for discussing the nature and bounds of human knowledge.

According to Cusanus, the human mind is primarily a “vis”, that is, a force or energy-centre, capable of producing perception and various types of knowledge through the unfolding of its own powers. The human mind is also described as a “viva substantia”, or as a divine seed that generates the world (“rerum universitatem”) at the cognitive level, that is, “notionaliter”<sup>10</sup>. More precisely, the human mind—as “imago” of the divine perfection which contains the truth of all things—can be characterized as “universitas assimilationis rerum”. Thus, human knowledge consists in an assimilation with the things to be known unfolding all possible notions<sup>11</sup>. With this conception of the mind as “vis com-

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<sup>8</sup> Nicholas of Cusa, 1401 Kues—1464 Todi (Umbria, Italy). After studies in Heidelberg and Padua, he took the doctorat in canon law in 1423; he probably taught at the University of Cologne after 1425; from 1432 onward he assumed an increasing number of ecclesiastical duties; in acknowledgement of his great services, pope Nicholas V made him a cardinal and gave him the diocese of Brixen in 1450; as legate to Germany he visited many cities and cloisters between 1450 and 1452. For a biographical sketch, see L. Dupré, “Introduction”, in *American Catholic Philosophical Quarterly* 64(1990), n° 1, 1-6, devoted to Cusanus.

<sup>9</sup> Notice that in several dialogues Cusanus’ doctrines were presented by the *Idiota*, that is, by a layman.

<sup>10</sup> See, in particular, *Idiota de mente*, ed. L. Baur, in *Opera omnia*, vol. V, Lipsiae 1937, c. 5, 62-63; cf. also *De venatione sapientiae*, ed. P. Wilpert, Hamburg 1964, c. 29. For the possibly Albertist background of some of Cusanus’ psychological and epistemological views, see M.L. Führer, “The theory of intellect in Albert the Great and its influence on Nicholas of Cusa”, in *Nicholas of Cusa in Search of God and Wisdom*, eds. G. Christianson & Th.M. Izbicki, Leiden 1991, 45-56, analyzing, inter alia, a manuscript of Albert with annotations by Cusanus.

<sup>11</sup> *De mente*, c. 3, 57: “Scis, quomodo simplicitas divina omnium rerum est complicativa. Mens est huius complicantis simplicitatis imago. (...) Si mentem divinam universitatem veritatis rerum dixeris, nostram dices universitatem assimilationis rerum, ut sit notionum universitas.” See also *Compendium*, eds. B. Decker & C. Bormann, Hamburg 1982<sup>2</sup>, c. 13, 54: the soul knows by virtue of a divine light. The idea that the movements of the soul, which comprehends the universe in its

prehensiva notionalis”<sup>12</sup>, Cusanus distinguished his position from Peripatetic as well as from Platonic psychology, emphasizing at the same time certain points of contact with both positions.

The Platonic doctrine of innate notions was unacceptable for Cusanus, as it would imply that the embodiment of the human mind no longer made sense. Consequently, Cusanus believed that the excitation of the senses was more than merely an occasional stimulus, that is, he insisted on sensation as an essential condition for the generation of knowledge about the sensible reality. Therefore, he believed that Aristotle was right in rejecting the Platonic “*notiones concreatas*”<sup>13</sup>. At the same time, however, Cusanus rejected the image of the human mind as an absolute blank passively receiving sensible stimuli and information. Just like a deaf man will never be able to play the guitar, so the mind is unable to acquire knowledge without the capacity of judgement<sup>14</sup>. And if this “*iudicium*” is what Plato meant by his inborn notions, then Plato was right<sup>15</sup>. But how does the mind gain knowledge of the external world, if it does not have innate notions of the world, nor can be passively informed by the senses? In other words, how does the judging, but ‘empty’, mind make contact with sensible reality so as to “assimilate” it?

Cusanus assigned perception and knowledge of the sensible realm to a single cognitive power, which he called ‘mind’. He explicitly rejected traditional faculty psychology, which envisaged various faculties for ontologically distinct objects. The human mind is basically a “*vis concipiendi*”, displaying a range of differentiated activities such as intellect, reason, imagination and sense<sup>16</sup>. The perceptual faculties, for example, are just modes of a mental activity: they are moments of the unfolding inner powers of a

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different modes, correspond to the divine unfolding (“*explicatio*”) and enfolding (“*complicatio*”), was already formulated by the 12th-century Platonist Thierry of Chartres. See P. Dronke, “Thierry of Chartres”, in *A History of Twelfth-Century Western Philosophy*, ed. P. Dronke, Cambridge 1988, 358-385, on 372f.

<sup>12</sup> *De mente*, c. 4, 60.

<sup>13</sup> *De mente*, c. 4, 60-61; cf. c. 13, 107.

<sup>14</sup> A similar position had already been defended by Bonaventura, cf. ch. II, § 1.7. It was to recur in Zabarella and Piccolomini; see ch. IX, § 1.

<sup>15</sup> *De mente*, c. 4, 61.

<sup>16</sup> *De mente*, c. 11, 100; see also *De coniecturis*, eds. J. Koch & W. Happ, Hamburg 1971, II, c. 2, p. 91.

unique “vis”, involved in a circular movement of “descensus & ascensus”<sup>17</sup>. Being interested in Cusanus’ view of the possible role of formal principles in intellectual knowledge of sensible reality, the issue for which the doctrine of intelligible species was developed, we must take a closer look at his analysis of the mind’s descent.

In *Compendium* and *Idiota de mente*, Cusanus argued for the necessity of species in sense perception and intellectual knowledge concerning natural reality. Only knowledge of pure intelligibles can do without instrumental similitudes<sup>18</sup>. Surprisingly, Cusanus endorsed the Peripatetic conception of the mechanics of perception as stated by the doctrine of the “multiplicatio specierum”<sup>19</sup>. Natural things do not penetrate directly into our sensitive soul; they transmit species which are multiplied through the medium, received into the sense organs, and preserved by the phantasy. The species are detached from matter, but they are not perfectly separate<sup>20</sup>. They are identified as natural signs, or informing forms<sup>21</sup>. The multiplied species do not penetrate the intellectual realm<sup>22</sup>. Rather, on the basis of sensible species, man may develop other (intellectual and artificial) species with the aid of his intellectual powers, according to his scientific, technical, and ethical needs<sup>23</sup>.

Knowledge of the sensible world is realized when the descending mind meets the sensible species in the “spiritus”, a subtle fluid which makes up the network of veins, arteries and inner conducts of the sensible organs<sup>24</sup>. Cusanus believed that the spirit cannot be altered by the species, unless the spirit is animated by the mind.

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<sup>17</sup> *De coniecturis*, II, c. 4, p. 106, and c. 13. See also *Compendium*, c. 13: the sensitive soul is “imago” or “similitudo intelligentiae”.

<sup>18</sup> *Compendium*, c. 11, 46.

<sup>19</sup> Cf. *De mente*, c. 4, p. 60, on the “species multiplicatae” of vision.

<sup>20</sup> *Compendium*, c. 4, 12.

<sup>21</sup> *Compendium*, c. 5, 14-18.

<sup>22</sup> In this sense, Cusanus’ reception of the multiplication doctrine reflected the original intentions of its spiritual fathers. See the positions of Robert Grosseteste and Roger Bacon, discussed in ch. II, § 1.3 and 2.3.

<sup>23</sup> *Compendium*, c. 6, 20-24. See also Gregory of Rimini’s notion of a “species ficta”, in ch. IV, § 3.4.

<sup>24</sup> For the role of the “spiritus”, see *De mente*, c. 8; see also *De coniecturis*, II, c. 10. The doctrinal background of this notion of spirit probably lay in views derived from Hellenistic and medieval medicine, as well as in Augustine and in then newly discovered Neoplatonic writings.

When animated by the descending mind, the spirit is capable of creating the similitudes of the mechanically introduced species:

In illis omnibus locis vehitur in spiritu arteriarum mens nostra, quae excitata per obstaculum specierum ab obiectis ad spiritum multiplicatarum se assimilat rebus per species, ut per assimilationem iudicium faciat de obiecto. Unde spiritus ille subtilis arteriarum, qui est mente animatus, per mentem ad similitudinem speciei, quae obstaculum praestitit motui, spiritus sic conformatur, sicut cera flexibilis per hominem mentis usum ac artem habentem configuratur rei praesentialiter artifici praesentatae.<sup>25</sup>

Sense perception depends on the incoming species and on the intentionality of the soul<sup>26</sup>. Perception occurs when the mind has created the conditions for its generation, that is, when the mind has animated the sense organs, descending into the spirit which pervades these organs. It is only by virtue of the species encountered by the mind in the spirit, however, that the mind's assimilation with the external world can take place. In this very assimilation, which is regarded as a necessary condition for the mental "iudicium", bodily reality plays a crucial role. Indeed, it is the animated spirit that assimilates itself to the things, when it meets an 'obstacle' created by the species. Thus, although strictly bound to the material "substratum", the species contribute essentially to the production of perceptual acts.

The species impinge upon the sense organs and actualize the latter. Insofar as it depends on species, perception is passive<sup>27</sup>. Eventually, however, it is the human mind that effectively generates the "notiones sensibiles"<sup>28</sup>. The essential link between the incorporated mind and the body is expressed by the fact that the mind needs sensible images or species in order to be excited<sup>29</sup>.

<sup>25</sup> *De mente*, c. 7, 75.

<sup>26</sup> See also *Compendium*, c. 13, 50 and 52: "(...) patet quod visio ex intentione coloris et attentione videntis oritur." This view is characteristically Augustinian; cf. ch. III, § 1.

<sup>27</sup> See *Compendium*, c. 13, 50: "Sentire quoddam pati est. Agit igitur species in corpus organicum iam dictum." The first part of this passage is a quotation from Aristotle's *De anima*, 416b33-35.

<sup>28</sup> *De mente*, c. 7, 76: "Unde cum mens has faciat assimilationes, ut notiones habeat sensibilium, et sic est immersa spiritui corporali, tunc agit ut anima animans corpus, per quam animationem constituitur animal."

<sup>29</sup> *De mente*, c. 4, 60-61: "(...) sic vis mentis, quae est vis comprehensiva rerum et notionalis, non potest in suas operationes, nisi excitetur a sensibilibus, et non

Where knowledge of unsensible things is concerned, auto-excitation is sufficient<sup>30</sup>.

The mind's descent is a necessary condition for its ascent: in view of its ontological bounds<sup>31</sup>, the human mind must descend into the body in order to be able to ascend<sup>32</sup>. It is in this context of the dynamics of mind that Cusanus' endorsement of the sensible species as the starting-point of knowledge should be understood<sup>33</sup>. Knowledge thus gained always remains inaccurate, because it is grounded in the similitudes of things that are unattainable *in se*<sup>34</sup>. Nonetheless, the common origin of mind and sensible things in God grounds the mind's relation to the sensible world<sup>35</sup>.

Based as it is on the animated spirit assimilating itself to the incoming species, human knowledge of sensible reality is effectively produced by the mind itself. In sensation the mind is not touched by sensible images. On the contrary, it is the mind itself that contacts matter<sup>36</sup>. In this respect, perception is active assimilation rather than passive reception<sup>37</sup>.

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potest excitari, nisi mediantibus phantasmatis sensibilibus." Cf. c. 7, 77. Surprisingly, this positive valuation of the senses and of the body is ascribed to Cusanus' 'Christian inspiration' by K. Kremer, "Erkennen bei Nikolaus von Kues. Apriorismus—Assimilation—Abstraktion", in *Das Menschenbild des Nikolaus von Kues und der christliche Humanismus*, Mainz 1978, 23-57, on pp. 25 and 28.

<sup>30</sup> *De mente*, c. 4, 61, and c. 7, 77.

<sup>31</sup> I do not discuss here Cusanus' reflections on the bounds of human knowledge, as formulated, for example, in *De docta ignorantia* and *De mente*, c. 7. According to Cusanus, knowledge of sensible reality is imprecise by definition. For a discussion of these themes, see Th. van Velthoven, *Gottesschau und menschliche Kreativität. Studien zur Erkenntnislehre des Nikolaus von Kues*, Leiden 1977.

<sup>32</sup> *De coniecturis*, II, c. 16; cf. N. Henke, *Der Abbildbegriff in der Erkenntnislehre des Nikolaus von Kues*, Münster 1969, p. 57.

<sup>33</sup> In my opinion, Cusanus derived this doctrine of perception, based on the mechanics of multiplied species, largely from medieval sources. For a comparison with the Stoic theory of adequation, see Henke, *Der Abbildbegriff in der Erkenntnislehre des Nikolaus von Kues*, 32.

<sup>34</sup> See, in particular, *Compendium*, c. 1, p. 2; see also c. 13, p. 52, for perception as an inferential process based on intermediate species. For discussion, see C.L. Miller, "Perception, conjecture, and dialectic in Nicholas of Cusa", in *American Catholic Philosophical Quarterly* 64(1990), 35-54.

<sup>35</sup> This theme was analyzed by Cusanus in *De docta ignorantia*.

<sup>36</sup> *De mente*, c. 7, 73.

<sup>37</sup> See *De mente*, c. 8, 81: the intellection of the sensible world as "motus mentis" is to be understood as "passio" only at its earliest stages.

In *De mente*, where Cusanus' theory of 'intellectual perception' is set forth, sensible species are accepted—even in the interpretation of the doctrine of multiplication—but *intelligible* species are not referred to. Where intellectual knowledge of the external world is concerned, Cusanus used terms like "notio" and "conceptio" to refer to the intellect's assimilation of the conceptualisable aspects of the sensible realm<sup>38</sup>. In *Compendium*, he endowed the human intellect with the capacity to engender intellectual and artificial species. In *De venatione sapientiae*, Cusanus spoke of the abstraction of intelligible species:

Corruptibile non intelligitur nisi per incorruptibilem eius speciem. Abstrahit enim intellectus de sensibili intelligibilem speciem. Non enim species seu ratio intelligibilis calidi est calida aut frigidi frigida—ita de cunctis—, sed est ab omni alterabilitate absoluta, ut formam rei sicut exemplar eius verum vere repraesentet. Et quia solum illa incorporea et immaterialis rei species seu ratio est actu intelligibilis et in actu intellectum transformabilis, patet intellectum omni temporali et corruptibili altiore et puriore et naturaliter perpetuum. Quod et clarissime percipis, quando vides, quod depurata ab omni corruptibili materia, quae non indigent abstractione, citius intelliguntur.<sup>39</sup>

The fact that Cusanus spoke of an abstraction of species does not mean that he subscribed to a causal theory regarding the possible sensible origin of intellectual knowledge. Elsewhere, in *De venatione sapientiae*, he affirmed that the human mind contains the "species formales", just like God possesses the "formae essentiales":

Nihil enim apprehendit intellectus quod in se ipso non reperit. Essentiae autem et quidditates rerum non sunt in ipso ipse, sed tantum notiones rerum, quae sunt rerum assimilationes et similitudines. Est enim virtus intellectus posse se omnibus rebus intelligibilibus assimilare. Sic sunt in ipso species seu assimilationes rerum. Ob hoc dicitur locus specierum. Sed nequaquam est essentia essentiarum. Supervacue igitur in intelligi suo quaerit rerum essentias, quae ibi non sunt. Sicut enim visus in sua virtute et potentia non habet nisi visibiles species seu formas et auditus audibiles, ita et intellectus in sua virtute et potentia non habet nisi formales species.<sup>40</sup>

<sup>38</sup> See, *De mente*, c. 8, 80.

<sup>39</sup> *De venatione sapientiae*, c. 36, p. 162-64; cf. also c. 6, for Cusanus' view of the relationship between sensible and intelligible objects.

<sup>40</sup> *De venatione sapientiae*, c. 29, p. 134.

The presence of “species formales” in the mind should not be understood in terms of Platonic nativism. The mind contains the formal species in the sense that it is able to produce them in virtue of its own forces; it is neither determined by innate mental contents, nor is it causally dependent on sensible images<sup>41</sup>.

Notwithstanding his rejection of all innate mental content, Cusanus was also convinced that the human mind contains *ipso facto* the similitude of the order of things, and that it needs only to be excited in order to actually produce its notions<sup>42</sup>. When the mind descends into the spirit to encounter the production of the sensible organs, the human soul absorbs the objective, intelligible aspects of sensible reality. This assimilation should not to be understood in terms of passive impression or information, because the mind as a cognitive ‘engine’ (in)forms itself, and may be compared to a wax tablet moulding itself<sup>43</sup>. Hence, if Cusanus spoke of intellectual abstraction, he accepted it as the necessary stimulus of the phantasms, and as nothing more<sup>44</sup>. He was willing to accept the multiplication of the species produced by the external objects up to the level of the animated spirit. Descending into this subtle matter the mind assimilates the sensible forms, (re-) producing them at a higher level<sup>45</sup>. As a consequence, the “species formales” or “intelligibiles”, present in the mind, are not to be identified with the traditional mediating formal principles of intellectual knowledge, viewed as a kind of co-product of the synergy between sen-

<sup>41</sup> See also, R. Steiger, “Die Lebendigkeit des erkennenden Geistes bei Nikolaus von Kues”, in *Das Menschenbild des Nikolaus von Kues*, 167-181, on p. 171.

<sup>42</sup> *De mente*, c. 7, 77; *De coniecturis*, II, c. 14; *De beryllo*, ed. K. Bormann, Hamburg 1977<sup>2</sup>, 6.7.

<sup>43</sup> *De mente*, c. 7, 77-78: “Et in hac assimilatione se habet mens, ac si flexibilitas absoluta a cera, luto, metallo et omnibus flexibilibus foret viva vita mentali, ut ipsa per seipsam se omnibus figuris, ut in se et non in materia subsistunt, assimilare possit. Talis enim vi suae flexibilitatis vivae, hoc est in se, notiones omnium, quoniam omnibus se conformare posset, esse conspiceret.” This metaphor was already present in the work of Peter Olivi; cf. *Quaestiones in secundum librum Sententiarum*, ed. B. Jansen, 3 vols, Quaracchi 1926, vol. II, 416. Also Roger Marston used this metaphor; see *Quaestiones disputatae de anima*, in *Quaestiones disputatae de emanatione aeterna, de statu naturae lapsae et de anima*, Quaracchi 1932, q. IX, p. 394.

<sup>44</sup> See also *De docta ignorantia*, I, c. 11, and II, c. 6 and 9, for Cusanus’ view of abstraction.

<sup>45</sup> This is what Cusanus meant by his claim that phantasms are knowable only in the light of reason; see *De coniecturis*, II, c. 10, 144, and c. 13, 160.

sitive faculties and the intellect. According to Cusanus, the “species” are simply and exclusively the hardwired basis of the expression of the sensible world at the mental level.

Steering clear of innatism as well as of a causal theory of the generation of intellectual knowledge of the corporeal world, Cusanus succeeded in formulating a plausible explanation of the origin and nature of empirical knowledge. Both the mind’s independence of sensible reality and its real connection to it are safeguarded by the conception of the mind as essentially “vis”, and by the doctrine of the mind’s descent and presence in the spirit, respectively.

Cusanus’ view of the origin of perceptual notions, though certainly original and innovative, did not constitute a radical break with the cognitive psychology of earlier time<sup>46</sup>. In the mind’s descent into the vehicle of sensible stimuli there are echos of a view developed by certain fifteenth-century authors drawing on an enigmatic text from Thomas’ *Summa contra Gentiles*, to the effect that the agent intellect’s “virtus activa” invests the phantasms<sup>47</sup>. Moreover, Cusanus’ intra-mental foundation of intellectual knowledge bears significant resemblance to medieval Augustinian views; later, this same idea will return in a different doctrinal setting in Suarez and Descartes.

Cusanus’ view of the generation of empirical knowledge, based on the mind’s assimilating itself to the objects without being touched by them, bears a remarkable resemblance to the theory of knowledge acquisition developed by Olivi as an alternative to the theory of species. It is not inconceivable that Cusanus borrowed his metaphor of the mind as a self-moulding wax tablet from Olivi. There were also fundamental differences of opinion between Olivi and Cusanus, however. The intra-mental production of knowledge in Olivi entailed a static relation, bordering on a stalemate, between on the one hand an unmoved mind,

<sup>46</sup> In most studies on the subject, Cusanus’ views are confronted with Thomas’ cognitive psychology. See, for example, Th. van Velthoven, *Gottesschau und menschliche Kreativität. Studien zur Erkenntnislehre des Nikolaus von Kues*, I, Kap. 1. This approach unduly restricts the possible frame of comparison between the psychology and epistemology of Cusanus and those of other Scholastics.

<sup>47</sup> See ch. V, § 2; its origin is Thomas, *Summa contra Gentiles*, II, c. 77, 1581; for its interpretation by Sylvester of Ferrara, see ch. VII, 2.2.



impreguably locked in a mental domain, and on the other hand a sensible realm unable to touch or to affect the intellect's spirituality. According to Cusanus, by contrast, the mind was of an essentially dynamic nature, able to descend into the very physiological structure of the sense organs in order to contact and assimilate the external world, yet without diminishing in the least the mind's spiritual nature. This dynamic presence of the mind is doubtless the most appealing aspect of Cusanus' alternative to the psychologies of Plato and Aristotle.

It is interesting to compare Cusanus' position, as outlined here, with Descartes' view of the acquisition of perceptual knowledge. Cusanus' attention for the physiological aspects of sense perception, as well as his view of the mental act as exclusively spiritual, entailed a form of epistemological dualism similar to that espoused by Descartes. This similarity was not caused by any direct influence of Cusanus on Descartes, however. Its explanation should rather be sought in a common Platonic background. Both philosophers presumed that sense perception is based on motion and 'obstacles', which occur in the spirit or, according to Descartes, in the animal spirits<sup>48</sup>. They shared the view that the human mind makes contact with mechanically transmitted effects of the external world in a physiological meeting-point, identified as the spirit or as the pineal gland. Moreover, both authors believed that the mind alone is able to judge these stimuli without being touched by them. Finally, both philosophies firmly placed the generation of cognition in the mind itself, being based not so much on innate contents, but rather (or, according to Cusanus, only) on innate dispositions<sup>49</sup>.

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<sup>48</sup> Compare Descartes' metaphor of the blind man and his cane in *Dioptric* with Cusanus' spirit assimilating itself to the 'obstacles' created by the (sensible) species. According to Leibniz, *Philosophische Schriften*, ed. C.I. Gerhardt, Hildesheim 1965, Band IV, 305, Descartes borrowed the stick-metaphor from Simplicius; cf. ch. XI, 1.1.2.

<sup>49</sup> For present purposes, I do not discuss the precise nature of Descartes' innatism, but simply observe the presence of the dispositional option in his thought; see also ch. XI, § 1.2.

### 1.2. Giovanni Pico della Mirandola

Pico della Mirandola<sup>50</sup> regarded the issue of the intelligible species of such importance that he devoted to it his first conclusion “secundum Albertum”: “Species intelligibiles non sunt necessariae, & eas ponere, non est bonis Peripateticis consentaneus.”<sup>51</sup> Referring to Albert, Pico wanted to discuss the problem in a pre-Thomistic context. In Albert’s work, as we have seen, the notion of intelligible species was still a relatively innocent device, lacking the heavy connotation it was charged with later. Until Thomas formulated his doctrine of species, and ensuing controversies developed, most authors who endorsed the notion of intelligible species used it as a philosophically neutral term<sup>52</sup>.

Pico returned to the species in conclusions based on other authors<sup>53</sup>. His own position is foreshadowed in a discussion of the notion of species attributed by him to Simplicius:

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<sup>50</sup> Giovanni Pico della Mirandola, 1463 Mirandola—1494 Florence. At the age of 14 he went to Bologna to study canon law; two years later he went to Florence, where he came into contact with Marsilio Ficino and the Platonic Academy; studied Aristotelian philosophy at the University of Padua between 1480-82, showing interest for Hebrew and Arabic; returned to Florence in 1482, where he engaged in a famous controversy with Ermolao Barbaro on philosophical style and methodology in 1485; in this same year he went to Paris to study Scholastic philosophy and theology; returned to Florence in 1486 and made plans for a disputation in Rome on 900 selected theses; pursued by a papal order, because his theses contained heretical material, he fled to France and was arrested in 1488, but released after a short time; returned to Florence, protected by the Medici, and in 1489 composed his *Heptaplus*; in 1492 he wrote *De ente et uno*. For more biobibliographical data, see J. Jacobelli, *Pico della Mirandola*, Milano 1988; F. Roulier, *Jean Pic de la Mirandole (1463-1494), humaniste, philosophe et théologien*, Genève 1989.

<sup>51</sup> *Conclusiones*, in *Opera*, Basileae 1557, 63-113, p. 63. In his critical edition of the *Conclusiones* (Genève 1973, p. 27), Kieszowski refers in a footnote to Albert’s *De homine*, q. 38, a. 1, but this text does not refer to intelligible species: “Intelligibile est simplex et substantia rei sine intentione sensibili et imaginatione”. Pico’s name will appear in later Scholastic psychological discussions; see Petrus Martinez, *In tres libros Aristotelis commentarii*, Segunti 1575, 362b; Franciscus Suarez, *Liber de anima*, in *Opera omnia*, t. III, Paris 1856, 716b and 723a. Some authors refer to his exegesis of the noetics of Isaac Narbonensis; cf. Franciscus Toletus, *Commentaria Unà cum Quaestionibus. In tres libros Aristotelis De anima*, Venetiis 1605, 144vb; Antonius Ruvius, *Commentarii in libros Aristotelis Stagyrtae (...), de Anima (...)*, Lugduni 1613, 657; Fortunatus Licetus, *De intellectu agente*, Patavii 1627, 1a.

<sup>52</sup> See ch. II, § 2.1.

<sup>53</sup> “Secundum Thomam”, concl. 39, p. 65; “Secundum Alpharabium”, concl. 9-10, p. 70. According to this last “conclusio”, the species must be defined as

Sicut lumen colores non facit colores, sed praeexistentes colores potentia visibiles, facit actu visibiles, ita intellectus agens non facit species cum non essent prius, sed actu praeexistentes species potentia cognoscibiles, facit actu cognoscibiles.<sup>54</sup>

A similar innatist doctrine Pico attributed to Adelardus<sup>55</sup>. His own position with regard to the role of species in intellectual knowledge, Pico set forth only in his "Conclusiones (...) secundum opiniones proprias".

Having established a philosophical concordance between Aristotle and Plato, and between Thomas and Scotus, Pico formulated as his first thesis, "Potest a specie in sensu exteriori existente immediate abstrahi species universalis."<sup>56</sup> Although he took a generally Platonic outlook on knowledge acquisition, Pico did not want his position to be totally at odds with Peripatetic cognitive psychology. He apparently envisaged, in a somewhat peculiar way, a kind of immediate abstraction, as opposed to a series of hierarchically ordered steps. At least, this strikes me as the only feasible interpretation of his attempt to reject the phantasms as the basis for the abstraction of the intelligible species<sup>57</sup>. These *prima facie* incompatible tenets suggest that Pico rejected the traditional theory of abstraction, but that he did not want to exclude the impact of sensible reality in the production of human knowledge. That Pico did not unconditionally support a radically intra-mental theory of cognition, is also testified by the fact that he mentioned it as one of the "conclusiones paradoxicae"<sup>58</sup>.

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"formaliter cognitio"; this represents a position similar to that of Godfrey of Fontaines, Olivi, and Baconthorpe.

<sup>54</sup> *Conclusiones*, p. 72.

<sup>55</sup> *Conclusiones*, p. 74: "Anima habet apud se rerum species, & excitatus tantum ab extrinseco." Pico probably referred to Adelard of Bath, a 12th-century English author, who studied in Tours and made extensive travels in South-Italy and the Middle East. Adelard was directly acquainted with many Greek and Arabic scientific works; a 12th-century translation of Euclid's *Elements* is commonly ascribed to him. According to P. Kibre, *The Library of Pico della Mirandola*, New York 1966<sup>2</sup>, 100, Pico possessed of this author a work entitled *Quaestiones naturales*.

<sup>56</sup> *Conclusiones*, p. 84.

<sup>57</sup> *Conclusiones*, p. 86: "Non dari species intelligibiles a phantasmatis abstractas, & ut veram, & Commentatoris, & Alberti sententiam asserimus."

<sup>58</sup> *Conclusiones*, p. 92: "Anima se ipsam semper intelligit, & se intelligendo quodammodo omnia entia intelligit." The expression "quodammodo omnia" is a clear reference to Aristotle, *De anima*, 430a14-15 and 431b20-22.

Pico's views on knowledge acquisition drew on a general theory of the participation of being and knowledge<sup>59</sup>, as is clear from a central passage in *Heptaplus* where the intellect's light is discussed.

Intellectus oculi sunt, intelligibilis veritas lumen est, et intellectus ipse intelligibilis cum sit intimae aliquid lucis habet, qua se ipsum potest videre, sed non potest et reliqua. Verum indiget formis ideisque rerum quibus, uti radiis quibusdam invisibilis lucis, intelligibilis veritas indubie cernitur.<sup>60</sup>

The human intellect is endowed with a kind of light by virtue of which it is able to see itself, but not the things in the world. The mind's self-knowledge is thus not a sufficient basis for actual knowledge of the world. In spite of Pico's emphasis on the Platonic features of this doctrine, it is obviously similar to Thomas' view of the *a priori* in human knowledge<sup>61</sup>. According to Pico, the inner light is not sufficient for arriving at actual knowledge of things. The intellect must open itself to the formal structures of sensible reality, which are conceived of as beams springing from an invisible light. Elsewhere in *Heptaplus*, the light is identified with "species intelligibiles"<sup>62</sup>. Pico suggested that this angelic light illuminates and pervades material reality<sup>63</sup>. The intellect is able to immediately grasp the light's effects; hence, a step-wise abstraction via the phantasms is not required.

Pico's theory of the intelligible species was essentially syncretistic. He had strong reservations about the traditional doctrine of species, as is clear from his denial of the need for species in the

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<sup>59</sup> See also the notion of participation referred to by Pico in his "Conclusiones theologicae", p. 98.

<sup>60</sup> *Heptaplus*, in *De hominis dignitate, Heptaplus, De ente et uno e scritti vari*, ed. E. Garin, Firenze 1942, 288.

<sup>61</sup> Remarkably, the metaphysical context of human knowledge, hinted at in these reflections on the intellect's light, is not very distant from Thomas' doctrine of participation, as developed in the context of his epistemology. See, for example, Thomas' doctrine of the "lumen intellectus agentis", which as principle of knowledge contains the first principles, and thus participates in the divine light, in *Summa contra Gentiles*, II, c. 78, 1586-1591. The divine light, in turn, is the ultimate principle of reality's intelligibility; see *Summa contra Gentiles*, I, c. 10, 64; I, c. 68, 570; *Summa theologiae*, I, q. 84, a. 5.

<sup>62</sup> *Heptaplus*, 252: "Lux autem, idest species intelligibilis faciem tenent, idest extrema angeli intellectus, quia accidentes ei sunt qualitates, non ad ipsius essentiam spectant."

<sup>63</sup> See also *Heptaplus*, 288-90.

Albertist propositions<sup>64</sup>. At the same time, however, Pico suggested that the intelligible species is not necessarily a representation abstracted from sensory images. It can also be understood as an intrinsically formal item. More to the point, the species' extra-mental origin can be reconsidered in the framework of Neoplatonic participation theory. In that context it can be understood as the specific feature of sensible reality that, by virtue of its transcendent origin, is able to touch and to inform the human mind.

### 1.3. Marsilio Ficino

The commentaries and original treatises of Marsilio Ficino's<sup>65</sup> exemplify the intensive assimilation and elaboration of Peripatetic elements in a strictly Platonic framework. In this section, I will attempt to reconstruct Ficino's views concerning knowledge of material reality in the light of the specific function assigned by him to the intelligible species. The expression "intelligible species" was used frequently by Ficino, in a manner that betrays a variety of influences, including classical Latin Neoplatonism, the translations of Greek Neoplatonist works by William of Moerbeke, and the Thomistic view of the intelligible species as formal "quo" of intellectual knowledge. The importance of the Thomistic tradition for Ficino was highlighted in his polemics against Averroes in the fifteenth book of the *Theologia Platonica*<sup>66</sup>.

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<sup>64</sup> The *Conclusiones* were patched together in great haste, however; their significance should not be overestimated.

<sup>65</sup> Marsilio Ficino, 1433 Figline—1499 Florence. Probably studied Latin, philosophy, medicine, and theology; his earliest writings date from about 1454; he began studying Greek in 1456, and ultimately translated the complete writings of Plato (1463-73, printed: Florence 1484), Plotinus (1463-73, printed: Florence 1492), and pseudo-Dionysius (1492, printed: Florence 1496); founded the Platonic Academy in Careggi, where Cosimo de' Medici granted him the use of Greek manuscripts and a villa; here he also wrote his *Theologia platonica* (1469-74, printed: Florence 1482).

<sup>66</sup> *Theologia platonica de immortalitate animorum*, in *Opera omnia*, Basileae 1576, reprint Torino 1983, 78-424, l. XV, on p. 327f; for discussion of Ficino's epistemology, see P.O. Kristeller, *Il pensiero filosofico di Marsilio Ficino*, Firenze 1953; M. Schiavone, *Problemi filosofici in Marsilio Ficino*, Milano 1957. The hermeneutical principles and aims of Ficino's Platonic translations and commentaries are discussed by J. Hankins, *Plato in the Italian Renaissance*, Leiden 1991<sup>2</sup>, part IV.

The key to understanding Ficino's epistemology is the central position of the human soul in the hierarchical structure of reality. The soul's affinity to all other degrees of being grounds its virtually infinite capacity for knowledge<sup>67</sup>. The intellect displays its cognitive activity by virtue of an innate spiritual force, and is connected to reality by "species" and "rationes", also called "formulae", representing the more narrowly defined cognitive objects<sup>68</sup>. Ficino rejected the idea that these "species" and "reasons" are received from the sensible world. According to him, the human soul is largely self-sufficient in its knowledge of the sensible world. The soul does not need the body to receive any impressed forms from it<sup>69</sup>. Indeed, the potentiality of the soul is such that it does not *receive* any forms (for it possesses them already), but rather "quod exercet nunc quam non exercebat ante"<sup>70</sup>. Yet, with regard to the exact manner in which the soul possesses and uses the species, "rationes" or "formulae", Ficino entertained a number of different theories, proposing sometimes contradictory views of their nature and function in the process of knowledge.

It is useful to start the reconstruction of Ficino's position by briefly considering his view of the mind's relationship to the perceptual faculties and to sensible reality. This relationship, in Ficino, is marked by a fundamental ambivalence. Generally speaking, Ficino believed that the senses and the phantasy can only *deceive* the intellect<sup>71</sup>. However negative this view may be, it also implied the possibility of a sort of 'contact' between the sensible and intellectual faculties. Ficino, who availed himself of more than one explanatory model, elsewhere gave a more positive account of the relation between inferior and superior psychological powers.

Ficino accepted the Peripatetic doctrine that the human soul knows bodily reality by means of images engendered by the senses. At the same time, however, he pressed the need for a

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<sup>67</sup> *Theologia platonica*, III.2, p. 121; II.9, p. 103.

<sup>68</sup> *Theologia platonica*, III.2.

<sup>69</sup> See *Theologia platonica*, IX.5, where Ficino argued against the Peripatetics that the soul works without the body; see also XV.3, and *In Enneades*, IV.6.1, in *Opera*, 1752: "Non imprimuntur sensibilium formae in anima."

<sup>70</sup> *Expositio in interpretationem Prisciani Lydi super Theophrastum*, in *Opera*, 1829; see also *In Enneades*, V.3.4, p. 1759.

<sup>71</sup> See *Theologia platonica*, IX.2-3.

metaphysical foundation of the essential immaterialism of sensory images in order to account for the (possibly positive) contribution of sensibility to the generation of human knowledge. Indeed, he believed that these images, when they reach the rational centre of the soul, must already have a non-material mode of being because of the essential indivisibility of the senses themselves<sup>72</sup>. Elsewhere, Ficino used the metaphor of the mind as “speculum” to illustrate the immaterial reception of sensory images. Forms are received by the mind as in a mirror, that is, without intrinsic alteration. Now, the images in a mirror are in a sense incorporeal, that is, they are not produced by the bodies reflected, but by the light that surrounds them—a light that ultimately derives from the soul of the sun. In this sense, then, the sensible images or species have a spiritual origin<sup>73</sup>.

The possibility that images may engender mental acts without subverting the latter’s spirituality Ficino explained in terms of the mediating function of the spirit. According to Ficino, the “spiritus”, a subtle material substance between soul and body, precludes *de facto* all immediate contact between body and soul; it may therefore serve, in principle, to filter out the ‘negative influence’ of body on soul<sup>74</sup>. The contact between on the one hand the images derived from the senses, and on the other hand the “formulae innatae” (which exist latently and independent from phantasms in the human soul<sup>75</sup>), triggers our grasp of the ideas<sup>76</sup>.

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<sup>72</sup> *Theologia platonica*, VII.1-4.

<sup>73</sup> *Theologia platonica*, VIII.13. As a matter of fact, Ficino did not accept the multiplication doctrine, not even for the sensible realm, in contrast with Cusanus.

<sup>74</sup> *Theologia platonica*, IX.5, p. 212: “Quae tamen vis sentiendi non sentit, nisi dum corporalis spiritus a corporibus agitur. Quando ergo per imaginationem vel phantasiam agi dicitur per corporis auxilium operari, quia revolvitur per imagines singulas, quae singula referunt corpora, & per impulsum corporalis spiritus a corporibus factum conceptae fuerunt.” See also VII.6, p. 178; *De vita*, in *Opera*, p. 531; *In Convivium* VI.6, in *Opera*, p. 1343-44.

<sup>75</sup> *Theologia platonica*, XI.5, p. 258; cf. XII.1.

<sup>76</sup> *Theologia platonica*, XII.2, p. 268: “Quando phantasia excitata per hominis alicuius figuram visu haustam, simulachro formatur humano, tunc humanae speciei formula quae latebat in mentis arcanis, instigata coruscat, & mentis sive rationis aciem actu format, quam formaverat habitu, formatio talis, vel intelligentia quaedam ambigua est, vel ortus intelligentiae. Postquam, ita satis formata est, hominis idea formatur, id est ratio per quam Deus hominem generat. Ita verò mens per formulam hominis ideae quadrat humanae, sicut cera quae ab annulo figurata

The conception of sensible images stimulating the soul to actualize potential mental contents (the aforementioned innate "formulae") strikes us as a plausible and virtually complete account of the origin of empirical knowledge. In point of fact, the intelligible species, whether innate or abstracted, can only be identified with the ideas or with the "formulae". One may wonder, then, why Ficino continued to use such terms as "intelligible species". Recall that Ficino did not abandon any of the traditional schools accepted by him as authoritative, including ancient Neoplatonism and medieval Scholasticism. As a consequence, his position of the intelligible species, between images, latent "formulae", and (cognitive) ideas or reasons, appears most of the time as rather problematic, and sometimes even redundant.

Ficino's position is multilayered both at the terminological and at the doctrinal level. The intelligible species, for example, he described as a "forma universalis significatrix", which cannot be produced by the body, because we know the essences in virtue of forms that are present in the mind as images<sup>77</sup>. This means that the species is innate, but it does not override its mediating function. That Ficino considered the species also as "quo", that is, as formal mediating principle of intellective cognition, is confirmed by his analysis of the origin of the species in book XI of the *Theologia Platonica*, where he argued that the link between intellect and intelligible object is subserved by a "species intellectualis"<sup>78</sup>. This species is abstracted, in the sense that it is produced by the human soul when it reflects itself in the images. With this account, Ficino apparently endorsed a doctrine of the intellect's descent into the lower sensitive faculties<sup>79</sup>. In fact, he held that the universal species are not impressed by images, but that they are produced by the mind itself. In this sense, species are inborn<sup>80</sup>.

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est, quando diligenter annulo admovetur, suo congruit exemplari." For the stimulus of the images, see also XV.18.

<sup>77</sup> *Theologia platonica*, VIII.4, p. 188.

<sup>78</sup> *Theologia platonica*, XI.1, p. 293.

<sup>79</sup> *Theologia platonica*, XI.2, p. 240-41.

<sup>80</sup> See *Theologia platonica*, XI.3, p. 241f, regarding "Obiectio Epicuri & responsio, quod species innatae sunt menti." See *idem*, p. 243: "Quamobrem intellectus quando formam illam creat, neque ex simulachro, neque in simulachro, neque per simulachrum procreat. Forte verò radium aliquem, seu vim inserit simulachro phantasiae, per quam ipsum simulachrum tanquam formator mentis



From the list of theories on the origin of the species rejected by Ficino, we may gather his profound knowledge of medieval discussions. The species cannot be produced by any bodily image. The phantasm is not an instrumental entity, used by the intellect in the generation of species, nor does the intellect introduce any "light-beam" in sensible images. Eventually, the only remaining solution is to assume the latent presence of the species in the intellectual soul, assimilating them with the inborn "formulae" mentioned earlier<sup>81</sup>.

The intelligible species is also mentioned in Ficino's critique of Averroes. According to the Averroists, the intelligible species is a "nodus", a link between the senses and the intellect. Ficino rejected this view. The human mind grasps only those objects of which it possesses the species or similitudes in itself<sup>82</sup>. The innate species is conceived as a "quo", grounding the knowledge of the "rationes rerum universales"<sup>83</sup>. In this context, probably urged by the need to refute the Averroistic conception of a unique intellect, Ficino

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formam huiusmodi generat, quam speciem vocamus intelligibilem. Sed neque hoc fieri posse putamus. Nempe vis illa suscepta simulachro ijsdem materiae conditionibus adstringetur, quibus simulachrum." Cf. *In Prisciani super Theophrastum*, 1803: the species is not "ab re accepta"; see *idem*, 1814. The view of an illuminated phantasm generating the intelligible species may be taken as a clear reference to the views of Giles of Rome, Jandun, and their respective followers in the 14th and 15th century; cf. ch. III, § 2.3, ch. IV, § 4, and ch. V, § 2-3.

<sup>81</sup> *Theologia platonica*, XI.3. See also XVIII.8, on the species in the separate and in the embodied intellect.

<sup>82</sup> *Theologia platonica*, XV.7, 341-342: "Asserunt Averroici arctiorem quandam (ut putant) copulam inter mentem & animalis huius phantasiam, per quam fiat homo unus, atque intelligens, quia scilicet mens speciem per quam intelligit, haurit à simulachro, quod sibi per sensus formaverit phantasia. (...) Nos huiusmodi copulam sufficere non putamus. Quo enim pacto potest species intelligibilis esse nodus, quo phantasia menti devinciatur (...) Actus quidem intelligendi in sola mente est, quod nemo negat, mens autem id intelligere solet, cuius habet speciem & similitudinem in seipsa. (...) Siquidem ibi solum intelligentia est, ubi propria & intrinseca intelligendi principia sunt. Haec verò sunt duo, virtus intellectiva, & intelligibilis species per modum penitus absolutum." In the 17th century, the XVth book will be cited by the College of Alcalá to support the real distinction between agent and possible intellect; cf. *Disputationes in tres libros Aristotelis de anima*, Lugduni 1637, 501a-506b, in particular p. 505a. For discussion of the medieval 'Averroist' species theory, see ch. IV, § 4.

<sup>83</sup> *Theologia platonica*, XV.13, 354.

quoted almost *verbatim* Thomas' definition of the intelligible species as particular "in essendo" but universal "in referendo"<sup>84</sup>.

Ficino's reflections on the intelligible species were largely responsive to the specific context of the discussion in which they occurred. In addition to the interpretation given above, elsewhere in the *Theologia Platonica* the intelligible species is assimilated to the cognitive object, that is, it is presumed to be equivalent to the idea<sup>85</sup>. This (implicit) identification betrays the influence of the Latin Neoplatonics and of William of Moerbeke's translations<sup>86</sup>. In Ficino's commentaries on Plato and Plotinus, the identification of the intelligible species with idea was even more explicit<sup>87</sup>.

Ficino's syncretism, availing itself of abundant reference to a wide range of concepts and doctrines from different traditions, stands in the way of a clear-cut view of the intelligible species. Ficino's Neoplatonism does not allow the human mind to deal directly with sensible reality. Therefore, intellectual cognition cannot depend on principles that communicate contents originating from the material world. Nevertheless, although the intelligible species is not conceived as a mediating entity between two realms, its instrumental role as *quo* is not abandoned. This instrumental role must be seen from a radically intramental perspective, however. Ficino may not have succeeded in giving a coherent theory

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<sup>84</sup> *Theologia platonica*, XV.13, 355. See Thomas, *In II Sent.*, dist. 17, q. 2, a. 1, ad 3um; quoted in ch. II, § 3.5. Elsewhere, also other Thomistic doctrines are referred to, including that on the indirect character of knowledge regarding individuals, and that of self-knowledge; see X.3 and 6. The aforementioned double determination of the species was to return in Nicoletto Vernia's noetics; see § 2.1.

<sup>85</sup> *Theologia platonica*, X.1: the intelligible species are in God "uno et proprio actu"; in XVI.1 and XII.4, the "species rerum" are assimilated to the cognitive object. In XVIII.3, Ficino actually referred to the ideas, speaking of "ideales rerum species".

<sup>86</sup> See ch. I, § 4.1 and 3.

<sup>87</sup> See, for example, *In Hipparchum Platonis Epitomae*, 1139-1144, and 1149, where the intelligible species are viewed as ideas; see also p. 1152, where the intelligible species is characterized as 'cognitive goal'. A similar position was developed in *In Philebum*, 1223 and 1225. For the gradual presence of the species "in mente, ratione, imaginatione", see *In Enneades*, I.1.9, 1553. Cf. also *In Enneades*, II.9.6, 1668, for the correspondence between ideas and species. In *In Enneades*, III.9, 1729, Ficino suggested a hierarchy between the species of reason and the ideas of the intellect. In *In Enneades*, VI.6.6, 1785, Ficino claimed that the "species rerum" logically precede their cognition.

of mental representation, yet his position was crucial for the development of subsequent attempts to preserve the theoretical core of both classical Neoplatonic and Scholastic cognitive psychology. It is exactly the syncretic tendency in Ficino's thought that was to return in the epistemological speculation of authors whose views did not belong exclusively to any philosophical school in particular<sup>88</sup>.

#### 1.4. Jacques Lefèvre d'Étaples and Charles de Bovelles

An interpretation of the intelligible species in a Neoplatonic context was also developed by two contemporary French authors, Jacques Lefèvre d'Étaples and Charles de Bovelles. They both merged traditional Aristotelian views with then newly developed Neoplatonic views on knowledge acquisition and on the course of the cognitive process. In contradistinction to Ficino, however, whose sensible images were mere stimuli triggering the cognitive process as such, these philosophers assigned a more substantial role to sensible reality and to sensory representations in the generation of knowledge.

Lefèvre d'Étaples, authoritative representative of a form of Aristotelianism founded on humanist principles<sup>89</sup>, developed in his paraphrase of *De anima* a syncretistic interpretation of Aristotelian cognitive psychology. In his analysis of the various stages of the cognitive process, he endorsed views borrowed from

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<sup>88</sup> In this sense, Bruno may have been one of Ficino's most important disciples; see ch. VIII, § 3.3. However, Ficino's name also appeared in the psychological reflections of the later schoolmen; cf. Suarez, *Liber de anima*, 744b; Collegium Complutense, *Disputationes in tres libros Aristotelis De anima*, which refers on p. 505a to *Theologia Platonica*, liber XV (see above); Georgius de Rhodes, *Philosophia peripatetica ad veram Aristotelis mentem*, Lugduni 1671, 512a, attributed to Ficino the view of a divine production of intelligible species.

<sup>89</sup> Jacques Lefèvre d'Étaples, ca. 1460—1536. French philosopher, theologian, and humanist, who was one of the major figures of "humanist Aristotelianism" during the first third of the 16th century. His many Aristotelian works were frequently reprinted and widely read. In 1491-92, he made a voyage to Pavia, Padua, Venice, Rome, and Florence, where he came into contact with Pico and Ficino. For discussion, see, *inter alia*, Ch.B. Schmitt, "The rise of the philosophical textbook", in *Cambridge History of Renaissance Philosophy*, eds. Ch.B. Schmitt and Q. Skinner, Cambridge 1988, 792-804, on p. 795.

medieval masters, amalgating them with basically Neoplatonic notions.

Lefèvre assigned different roles to the sensible object and to the agent intellect in the generation of intellectual knowledge. The human soul knows the material objects “per speciem ab ipsis in mente formatam”<sup>90</sup>. The role of the agent intellect Lefèvre described as inducing the very “notiones rerum” in the potential intellect<sup>91</sup>. The mental act coincides with the actual intelligible and the actualized intellect. According to Lefèvre, this means that the intelligible species arising in mental acts can be considered as intelligible in act, namely, insofar as they are produced by the object. However, insofar as they are received by the intellect, the species must be identified with the intellection<sup>92</sup>. Thus, Lefèvre argued that intellectual cognition consists in an inextricable bond between content, act, and representation. The identification of the intelligible species with the intellection, also frequently found in the medieval tradition<sup>93</sup>, enabled Lefèvre to specify the respective positions of phantasm and species:

Ita phantasma sensuale existens in sensu interiori suam causat speciem in intellectu, & fit prima intellectio, singularis scilicet & concreta cuius sensibile phantasma obiectum est, & eius notio recepta in intellectu, est intellectio<sup>94</sup>.

Lefèvre did not consider the production of the intelligible species or primary mental acts as the conclusion of the cognitive process, but rather as the upbeat to another stage of intellectual knowledge, independent of sensible reality.

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<sup>90</sup> *Paraphrasis trium de anima complectorum*, in *Philosophiae naturalis Paraphrasis*, Parisiis 1525 (first ed. 1492), 219v-229r, on p. 221r.

<sup>91</sup> *Paraphrasis trium de anima complectorum*, 221r. For a more explicit assimilation of species to notion, see the position of Agostino Nifo, discussed in section 3.

<sup>92</sup> *Paraphrasis de anima*, 223r: “Consimili quoque modo existimandum est idem re ipsa esse intelligibile actu & intellectum actu atque intellectionem, utpote speciem intelligibilem ab obiecto in ipso intellectu efformatam, ratione tamen diversa sunt. Nam ea species quatenus ab obiecto potentiaque intelligibili perficitur, dicitur intelligibile actu quia actionis quidem rationem obtinet; quatenus vero eadem in intellectu recipitur ut subiecto, dicitur intellectus actu atque intellectio, quia perinde passionis rationem sortitur.”

<sup>93</sup> For Godfrey, Olivi, and Brito; see ch. II, § 3.3 and 5.

<sup>94</sup> *Paraphrasis*, 223v.

Lefèvre distinguished between two moments in the generation of intellectual knowledge. In ‘first order’ intellection, the agent intellect, “concurrente tamen simulacro sensibili opefice extrinseco”, produces a “notio concreta & singulare”<sup>95</sup>. This notion is not identified explicitly with the intelligible species mentioned above, but it is not likely that Lefèvre would want to make a sharp distinction between these two notions. On the basis of this first intellection, the intellect is able to engender independently, that is, without receiving anything and on the basis of the concrete notion acquired earlier, a “notio abstracta & universalis”<sup>96</sup>. This distinction in Lefèvre seems to have been inspired by medieval authors, such as Thomas Wilton, Jandun and some of his followers, Gregory of Rimini, Peter of Ailly, and Paul of Venice<sup>97</sup>.

The intellectual soul generates knowledge of “entia supramundana” without the help of sensory images. This type of cognition is brought forward by the mind itself. Empirical knowledge is a necessary but not a sufficient condition for the generation of notions regarding pure intelligibles. As “vestigia” the sensibles are related to their origin, but the mind does not reach knowledge of the intelligibles on the basis of the notions it formed about sensible things. Indeed, the cognition of intelligibles differs from that of sensibles, as the notion of an angel differs from that of man<sup>98</sup>.

In his interpretation of Aristotelian cognitive psychology, Lefèvre endorsed theories borrowed from various medieval schools. Thus, he accepted the need for phantasms and sense-dependent mental representations in the cognition of sensible indi-

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<sup>95</sup> *Paraphrasis*, 224r.

<sup>96</sup> *Paraphrasis*, 224r; see ibidem: the abstract notion is formed by the intellect “(...) cum iuvamine notionis concretæ, a qua abstrahit. (...) Et istarum abstractarum notionum intellectus solus est opifex sine quopiam cooperante, quare magis huiusmodi notionum secundarum opifex est intellectus quam primarum.”

<sup>97</sup> See ch. IV, § 3.4, 4.1, and 4.3; ch. V, § 1.1 and 3.1.

<sup>98</sup> *Paraphrasis*, 224r: “Sed ex sensibilibus mens nostra ad intelligibilia cognoscenda elevatur per abstractionem & abnegationem eorum quæ in sensibilibus comperiuntur. (...) Intellectus ergo noster paulatim & per gradus quosdam conscendens, abnegat & abstrahit huiusmodi sensibilibus affectiones & proprietates, & ex huiusmodi abnegatione tandem pervenit ad veras intelligibilium notionem, ut ex notione corporei format notionem incorporei, non quidem sumendo corporei notionem pro obiecto & eius speciem concipiendo, nam ea species nil nisi corporeum referret, sed eam abnegando & ex ea aliam penitus alteram & quodammodo oppositam efformando.”

viduals and universal notions, respectively. From the Albertistic tradition, he accepted the notion of a sense-independent knowledge of separate substances and pure intelligibles. Lefèvre's view of the soul's ascent from the notions of sensibles to those of intelligibles reminds of Ficino's Neoplatonism, by which Lefèvre was indeed influenced<sup>99</sup>. As many moderate opponents of Peripatetic naturalism before him, he accepted the species on condition that no sharp distinction between act, presentation, and object is presumed.

Like Ficino, Charles de Bovelles<sup>100</sup> understood the nature and action of the human intellect primarily from its particular position in the hierarchy of reality, intermediate between the sensible world and the realm of the angels<sup>101</sup>. While angels have only actual cognition, the human soul is marked by a fundamental potentiality<sup>102</sup>. Angelic knowledge, which requires no mediating principles, is pure intuition, whereas the human mind is unable to arrive at knowledge without species<sup>103</sup>. This difference goes back to that between the composition that marks the human mind and its objects, and the simplicity that marks the angelic intellect and its contents:

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<sup>99</sup> Notice that the commentaries to the Hermetic treatises translated by Ficino and published in his *Opera omnia*, vol. II, 1839f and 1858f, are written by Lefèvre d'Étaples; cf. P.O. Kristeller, *Supplementum Ficinianum*, 2 vols., Firenze 1937, vol. I, cxxx-cxxxi; see also I. Pantin, "Les 'commentaires' de Lefèvre d'Étaples au *Corpus Hermeticum*", in *Présence d'Hermès Trismégiste*, ed. A. Faivre, Paris 1988, 167-183.

<sup>100</sup> Charles de Bovelles, 1479 Saint-Quentin—1553 or 1567 Ham (near Saint-Quentin). Studied in Paris, 1495-1503, with Lefèvre d'Étaples; travelled extensively for some years before settling in Noyon, 1515; wrote many philosophical and theological works which owe a good deal to the recent Neoplatonism of Ficino. For discussion, see: E. Rice, *The Renaissance Idea of Wisdom*, Cambridge (Ma.) 1958, p. 106-115; G. Di Napoli, *L'immortalità dell'anima nel Rinascimento*, Torino 1963, p. 343; J.M. Victor, "The revival of Lullism at Paris, 1499-1516", in *Renaissance Quarterly* 28(1975), 504-534; idem, *Charles de Bovelles. An Intellectual Biography*, Genève 1978; F. Joukovsky, "Thèmes plotiniens dans le *De sapiente* de Charles de Bovelles", in *Bibliothèque d'Humanisme et de Renaissance* 43(1981), 141-153; *Charles de Bovelles. En son cinquième centenaire, 1479-1979*, Paris 1982.

<sup>101</sup> A similarly broad approach to epistemological issues had been common in the Middle Ages. However, angelic knowledge was mostly analyzed by analogy with human knowledge. See, e.g., Giles of Rome's *De cognitione angelorum*, and ch. III, § 2.3.

<sup>102</sup> *Liber de intellectu*, in *Opera*, Paris 1510, 3r.

Qui enim deficit a simplicitate subiecti: deficit et a simplicitate obiecti. Et qui mixtus est subiecto: mixtus est et obiecto.<sup>104</sup>

That the human mind and its objects are composed, according to Bovelles, entails that human knowledge is essentially a dynamic process of assimilation: cognition is produced in interaction with sensible reality<sup>105</sup>. The mind's knowledge depends on the external world, that is, it acquires knowledge of created things only; the angelic intellect, by contrast, contains the creation "ante esse" at an ideal level<sup>106</sup>. The human mind does not possess any innate contents, for otherwise it would stop being the "opifex" of its knowledge<sup>107</sup>. As a matter of fact, between God, the angels and the human soul, reality evolves in a process of gradual articulation<sup>108</sup>.

The activity of the human mind as the origin of its own concepts goes hand in hand with a fundamental receptivity with respect to external, material reality. The mind is compared to a mirror steamed up:

Humanus vero intellectus sensim rerum (ut diximus) colligit species: illis ipsis afficitur easque suscipit et intus admittit. & est ut intransparens speculum: in quo cum lumine & in circumstantis luminis meditullio visitur imago. Perinde atque in lunari globo circumstante lumine: maculosus quispiam exprimitur vultus.<sup>109</sup>

The mind is receptive or "passibilis" merely insofar as it can be identified with a memory in which "rerum imagines & intellectuales species" are received. As "vis simplex"<sup>110</sup> the human intellect grasps and judges the species either in the external object or in the memory. The intellectual memory only stores species; Bovelles

<sup>103</sup> *Liber de intellectu*, 3r; cf. 145r.

<sup>104</sup> *Liber de intellectu*, 4v.

<sup>105</sup> *Liber de intellectu*, 4v; cf. p. 8r, for the human intellect conceived as "exterior & activus".

<sup>106</sup> *Liber de intellectu*, 5r-v.

<sup>107</sup> *Liber de intellectu*, 9r: "Unde iterum manifestum est humanae menti nullam a natura inesse speciem: sed eam ad divinae mentis similitudinem universarum suarum notionum esse opificem." The view of man as the "opifex" of his cognition was also crucial for Cusanus.

<sup>108</sup> *Liber de intellectu*, 9r; see also 10r and 11v, on the circle between "mundus-intellectus-memoria", viewed as "initium-medium-finis" of human intellection. See also pp. 12r-13r.

<sup>109</sup> *Liber de intellectu*, 9v.

<sup>110</sup> This definition is another central tenet of Cusanus' thought.

compared it to a mirror which contains images without seeing them. Thus, mind and memory do not coincide.

Surprisingly, Bovelles described the active intellect as a knowing faculty, and the potential intellect as a storing faculty. He thus reversed the classical Peripatetic doctrine that drew a distinction between an agent, not-knowing, intellect and of a receptive one that effectively knows<sup>111</sup>. A similar position is found in some medieval authors, often combined with a hierarchical, Neoplatonically inspired, conception of the relation between possible and agent intellect, and often with a form of nativism with regard to contents<sup>112</sup>. In Bovelles, however, the impact of the outer world remains crucial; only when all intelligible species are received, sense-independent contemplation becomes possible:

(...) ad internam solam sui memoriam convertitur et asservata in ea rerum omnium intellectualia spectra speculatur: que operatio humana contemplatio vocatur: humanive intellectus ad seipsum revocatio status in seipso finis et quies.<sup>113</sup>

Once the memory of human intellect has acquired all possible species, it may be regarded as an "alter mundus" or a microcosm<sup>114</sup>.

The human mind has two acts that ground its contemplation: the "acquisitio specierum" and the subsequent "speculatio"<sup>115</sup>. Memory is indispensable for intellectual activity, because the storage of species is a condition for the mind's relative independence with respect to the external world. Indeed, once the species are received and stored, a "conversio ad phantasmata" is no longer needed to produce an intellectual act. This 'subsidiary independence' of the intellect Bovelles shared with Albert and many of his medieval

<sup>111</sup> *Liber de intellectu*, 9v; see also pp. 13v and 17r.

<sup>112</sup> Cf. in particular Albert and his followers, discussed in ch. II, § 2.1, ch. III, § 5.2, and ch. V, § 2, respectively.

<sup>113</sup> *Liber de intellectu*, 10r.

<sup>114</sup> *Liber de intellectu*, 10v: "Humani intellectus memoria est alter mundus qui microcosmus dicitur maioris mundi speculum: verum contemplativi intellectus obiectum." In this work, Bovelles restricted this view to man's "memoria perfecta". Elsewhere, however, the metaphor of microcosmos was also used for man as composed of body and soul; cf. *De sapiente*, in *Opera*, 130r.

<sup>115</sup> *Liber de intellectu*, 10r-v.



followers<sup>116</sup>. By assigning a necessary function to sensible images in the production of mental acts, however, Bovelles sought to steer clear from the problems envisaged by many medieval Augustinian opponents of the intelligible species<sup>117</sup>.

The twofold act of the intellect is correlated to the activity of memory, which is described as “conservatio & repraesentatio”<sup>118</sup>. As receptacle of the cognitive species, memory is viewed as a sort of second intelligence, “intelligentiae resumptio & iteratio”. It was in precisely this sense that Bovelles accepted the Platonic conception of memory, as only that person may be regarded as effectively knowing whose memory is full of notions<sup>119</sup>. Bovelles, however, did not accept Plato’s innatism as a valid explanation for the origin of human knowledge.

“Mundus ab initio actu est omnis: que fieri natus est homo.”<sup>120</sup> This dictum, which qualifies man as a microcosm, is consequently interpreted by Bovelles in the context of our acquisition of knowledge of extra-mental sensible reality. Intelligible species arise in the material world, ‘pass through’ the intellect, and then arrive at their final destination, namely, memory. When the sensible species are received in the senses, the intellect can abstract from them an intelligible species<sup>121</sup>. Between sensible reality and memory, the species are emancipated from their accidental nature and transformed into intelligible entities<sup>122</sup>. However, the intellectual object does not subsist in the material world; therefore, logically, it cannot be produced by it. Intelligible objects exist only by virtue of the intellect<sup>123</sup>. The human mind is conceived as the “opifex” of its own cognition, not suffering any influence from the body. For this reason, intellectual abstraction in *De intellectu* ultimately remains

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<sup>116</sup> See, for example, the 15th-century Albertists discussed in ch. V, § 2; cf. also Lefèvre d’Étaples.

<sup>117</sup> See, e.g., ch. III, § 3-4.

<sup>118</sup> *Liber de intellectu*, 11r; see also p. 18r, for the distinction between intellect and memory.

<sup>119</sup> *Liber de intellectu*, 11r: “Fit rursum ut haud absque ratione dixerit Plato: scientiam esse memorie resumptionem.” See also the position of the mnemonic species in Peter Olivi (ch. III, § 3.4) and Gregory of Rimini (ch. IV, § 3.4).

<sup>120</sup> *Liber de intellectu*, 10r, 11r, and 12v.

<sup>121</sup> *Liber de intellectu*, 11v.

<sup>122</sup> *Liber de intellectu*, 12r.

<sup>123</sup> *Liber de intellectu*, 12r; see also pp. 14r and 18r.

a rather nebulous procedure, as the transition from senses to intellect is taken for granted rather than explained<sup>124</sup>. In *De sapiente*, in the context of the thesis of man as a microcosm, Bovelles was more explicit about intellectual abstraction<sup>125</sup>. As in Lefèvre and Cusanus, the notion of abstraction in Bovelles must be understood in terms of the dynamics of the human soul articulated as ascent and descent.

Like the authors examined in the previous subsections, Lefèvre and Bovelles worked out a Neoplatonically inspired interpretation of the intelligible species. Although subscribing to the need for sensible representations in the production of intellectual knowledge, they tended to restrict the impact of sensible reality to the earliest stages of the cognitive process. Once the human mind has assimilated the raw conceptual information on the formal structure of extramental reality, it may set about its task by itself. In this framework, the classical distinction between “quo” and “quod” has been relativized: the “quo”, as acquired species, is the starting-point of sense-independent intellectual activity. In the analysis of intellectual cognition, Lefèvre and Bovelles did not draw sharp distinctions between the various moments of the cognitive process. Mental act, cognitive content and representation describe the same event from different perspectives. The species is regarded not so much as act or as actual intelligible, but rather as notion or cognitive content—content which the intellect, no longer bound to the continuous contemplation of phantasms, can use freely as ‘prime matter’ for the autonomous production of abstract cognition. The implicit identification of species and “notion” resumed in a certain sense Aristotle’s *noema*<sup>126</sup>—an interpretation that was to be taken up in more explicit form by Agostino Nifo and some of his followers.

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<sup>124</sup> See the lapidary remarks on ff. 13v-14r.

<sup>125</sup> *De sapiente*, c. XX, 130r f: the thesis that man is a microcosm applies to both soul and body. Thus, the transition between the sensible and the intellectual cognition is metaphysically explained.

<sup>126</sup> See ch. I, § 1.3; cf. also the Arabic theory of “intention”, analyzed in ch. I, § 3.

### 1.5. *Girolamo Fracastoro*

After Cusanus and Bovelles, also Girolamo Fracastoro<sup>127</sup> attested to the existence of a relatively independent camp in Renaissance philosophy. Psychological and epistemological discussions in this camp were much less influenced by tradition than those in the Aristotelian or Platonic schools<sup>128</sup>. In Fracastoro's *Turrius sive de intellectu*, the issue of intentional species is centrally present from the start. Fracastoro believed that the origin of all cognition lies in the brain<sup>129</sup>. His unconditional acceptance of sensible and intelligible species must be seen in the context of Fracastoro's anatomical and physiological interest in the role of external and internal senses in the generation of human knowledge.

According to Fracastoro, human knowledge occurs "per rerum simulachra". Although these were described as "spectra" by some writers, Fracastoro preferred the traditional term "species"<sup>130</sup>. At the outset of his work, Fracastoro remarked that many questions could be raised concerning nature, origin and propagation of the species, as well as with regard to their relation to sensible forms. His purpose in *Turrius*, Fracastoro declared, was to deal with other problems<sup>131</sup>. *Turrius* concentrates on the idea that all knowledge is caused by an alteration of the soul, that is, on the notion of "intelligere" as "pati". This alteration is not engendered by the things themselves, but by the species. Species are entities engendered by the things and representing them in the soul:

Nunc tantum sufficiat de ijs dicere, quod a rebus momento effluunt, & diffunduntur in orbem, quacunq[ue] medium, per quod transe-

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<sup>127</sup> Girolamo Fracastoro, 1470 Verona—1553 Verona. Italian physician and natural philosopher; studied mathematics and medicine in Padua; then taught logic and medicine; later practised medicine in Verona; wrote various works on medicine and natural philosophy; contributed to the debate on the immortality of the soul; favoured a Democritean corpuscular theory. For discussion, see E. Cassirer, *Das Erkenntnisproblem in der Philosophie und Wissenschaft der neueren Zeit*, Band I, Berlin 1911, 208f.

<sup>128</sup> In fact, Pico and Ficino, though strongly fascinated by the idea of a philosophical "concordia", were exponents of a quite different attitude.

<sup>129</sup> *Turrius sive de intellectione dialogus*, in *Opera omnia*, Venetiis 1574 (2nd ed.), 121r-148v; see *Liber I*, 121v, and *Liber II*, 131r-148r, in particular 146v.

<sup>130</sup> *Turrius*, 121v. The term "simulachrum" is of a clearly Platonic origin; cf. the frequent use made of it by Ficino.

<sup>131</sup> *Turrius*, 121v-122r; for the species' nature, see also p. 127v and below.

unt, est susceptivum earum. Tale autem medium videtur esse perspicuum & transparent corpus, quod diaphanum vocant: per densa enim & opaca non transeunt. Item & naturam earum esse ea animae repraesentare & offerre, quorum sunt species, (...).<sup>132</sup>

Fracastoro ruled out that there are species of material substances qua substance, of God<sup>133</sup>, and of the separate substances. He regarded species as emanating from material objects only, emphasizing their continuous "propagatio" through the medium and the senses up to the intellect<sup>134</sup>.

Fracastoro's acceptance of an unbroken chain of species from sensible reality up to the intellect carried the multiplication doctrine of Roger Bacon, which accounted for sensible species only, into the realm of intellectual knowledge. Although this view was not novel in the history of cognitive psychology<sup>135</sup>, it was put forward in remarkably Epicurean words<sup>136</sup>.

Fracastoro believed that the intellect is able to preserve the species longer than the senses. This capacity was not regarded as sense-independent. Fracastoro looked for physiological reasons for loss of memory<sup>137</sup>. In his view, intellectual knowledge is based on movement and alteration, that is, on species<sup>138</sup>:

Praeterea motus omnis & alteratio nihil aliud est quàm forma, quae recipitur, quatenus aliquid actu fit, quod in potentia erat. In in-

<sup>132</sup> *Turrius*, 121v.

<sup>133</sup> He did not say that God cannot be known, however. Rather, he seemed to endorse a view similar to that of Lefèvre d'Étaples: God can be known by a process of extrapolation on the basis of species of material objects.

<sup>134</sup> *Turrius*, 122v.

<sup>135</sup> See Augustine, *De Trinitate*, ed. W.J. Mountain, *Opera*, pars XVI.1-2, Turnhout 1968, XI, c. 9, 353, discussed in ch. III, § 1. Giles of Rome (ch. III, § 2.3) and John of Jandun (ch. IV, § 4.3) argued for a crucial role of the (illuminated) phantasms in the generation of intelligible species. Some of Jandun's Italian disciples, such as Taddheus of Parma and James of Piacenza, charged Giles of Rome (erroneously, as we have seen) with holding that sensible and intelligible species are numerically identical; cf. ch. IV, § 4.4 and 6. Paul of Venice endowed the phantasm with the power to trigger the intellect's first act; cf. ch. V, § 3.1.

<sup>136</sup> In the next century, Gassendi was to develop a more straightforwardly Epicurean species theory; cf. ch. XI, § 3.

<sup>137</sup> *Turrius*, 123v-124r.

<sup>138</sup> Fracastoro's assimilation of species and motion has probably been the motive for Louis de la Forge's polemic with the author of *Turrius*. De la Forge rejected the traditional sensible species, and eventually reinterpreted it in a Cartesian sense as motion in the sense organ and in the brain, stirring the mind to sense perception. See ch. XII, § 3.2; for a similar position, see also Emanuel Maignan, examined in ch. XII, § 3.1.

tellectione autem non recipitur aliud, quam species repraesentans, per quam actu fit anima. Impossibile igitur est alterationem hanc à specie separari.<sup>139</sup>

Notwithstanding his emphasis on physiological and kinetic aspects of human knowledge, Fracastoro was also keenly aware of the intentional aspects of the cognitive act. He did not think that the mere presence of the species is sufficient for intellection; for intellectual apprehension an “applicatio animae & intentio” is needed<sup>140</sup>.

According to Fracastoro, the species cannot account for our knowledge of universals. At the same time, however, Fracastoro rejected the theory that the universal can be generated (that is, extrapolated from the “simulachra”) by a separate agent intellect. This point merits particular attention: it means that Fracastoro’s naturalism did not entail any form of Averroism. Fracastoro did not question the existence of separate intelligences, but he firmly believed that they do not require any species<sup>141</sup>. His solution for the formation of universal notions was both simple and pragmatic, as opposed to dogmatic: universals are formed only at a later stage of our lives, after a long and intensive process of selection and elaboration of the “subnotiones” produced by the internal senses<sup>142</sup>. Universals are effectively formed after comparison of numerous species. The procedure envisaged by Fracastoro entails both a distinction between species and universals, as well as a certain sense of identity. Insofar as they are present “separata et distincta” in the intellect, species and universal are identical, that is, “quatenus [species] imago est & repraesentat”. With regard to their “esse”, however, they are distinct<sup>143</sup>. Closely connected to this doctrine is Fracastoro’s twofold ontological characterization of the

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<sup>139</sup> *Turrius*, 123r-v.

<sup>140</sup> *Turrius*, 124v. As regards the lower faculties, the common sense reaches only to the formation of a “subnotio”. For the role of the imagination, see pp. 125v-127r. For the cognitive penetrability of sense perception, see the positions of Alhazen (ch. I, § 3.1), Bonaventura (ch. II, § 1.7), Cusanus (*supra*), and also Telesio (ch. VIII, § 3.2).

<sup>141</sup> *Turrius*, 129r-v.

<sup>142</sup> Also animals manipulate these “subnotiones”; cf. the case of a bird laying her eggs at a safe place, examined in *Turrius*, 137v.

<sup>143</sup> *Turrius*, 130r.

species as “ens per se” or “qualitas” and as representative being, formulated at an earlier stage<sup>144</sup>.

With its firm commitment to the physiological foundations of human knowledge, Fracastoro’s contribution to the reflection on nature and function of mental representation may be regarded as innovative. His emphasis on the intellection as movement and alteration may be seen as a return to a more genuine interpretation of Aristotle’s comprehensive theory of perception and intellectual apprehension. His insistence that “subnotiones” are the basis of intellectual knowledge, on the other hand, was probably influenced by the Epicurean or Stoic notion of *prolepsis*, and as such can be seen as anticipating Gassendi’s theory of ideas<sup>145</sup>. With his openly professed naturalism, Fracastoro’s position in the development of early sixteenth-century psychology was a rather isolated one<sup>146</sup>. A similar position, but much more radically formulated, is found only in the writings of Telesio<sup>147</sup>. This Calabrian philosopher, however, no longer referred to the species as cognitive instruments<sup>148</sup>.

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<sup>144</sup> *Turrius*, 127v: “Duo enim in specie repetita sunt: alterum, quod ipsa secundum se qualitas quaedam est, secundum quam ens per se est, & absolutum; alterum vero est esse, quod habet, quatenus repraesentativa est: secundum quod relativum quoddam est.” The characterization of the species as “qualitas” was frequently used by the post-Jandun generation; during the Renaissance it would also be formulated by Simone Porzio and others; see ch. IV, § 4 and ch. VII, § 4.2, respectively. For a parallel of the more strong “ens per se”, see Zabarella, discussed in ch. IX, § 1.1.

<sup>145</sup> See ch. I, § 1.4; for Gassendi, see ch. XI, § 3. See also D. Glidden, “Hellenistic background for Gassendi’s theory of ideas”, in *Journal of the History of Ideas* 49(1985), 405-424.

<sup>146</sup> Fracastoro was to be cited in Collegium Conimbricense, *Commentaria in tres libros de anima*, Venetiis 1616, 354a. Moreover, many 17th-century authors, including Hobbes, Gassendi and Louis de la Forge, were acquainted with his work.

<sup>147</sup> The naturalism of *Turrius* was amended by the dialogue *De anima* (published in the *Opera omnia*), in which Fracastoro defended the immortality of the soul, and also claimed that the intellect can know God without the help of the senses. This doctrine, too, foreshadowed Telesio’s combination of naturalism and the view of a separate, divine intellect.

<sup>148</sup> For Telesio’s views on human intellection, see ch. VIII, § 3.1.

## § 2. EARLY PADUAN DISCUSSIONS

I now turn to a number of North-Italian writers whose activity can be dated after Barozzi's 1489 enactment, but before the interventions of Pomponazzi and Marcantonio Zimara in the species debate. The significance of this date is that their views on the species were not influenced by these authors<sup>149</sup>. Pietro Barozzi's *Decretum contra disputantes de unitate intellectus* (1489) noticeably changed the nature of psychological disputes, inducing philosophers such as Vernia and Nifo to publicly denounce Averroes' interpretation of Peripatetic psychology<sup>150</sup>. Other authors, such as Achillini, did not completely break with the Commentator, but their appreciation of his teachings tended to be ambiguous at least, an attitude shared by many of his medieval predecessors.

For the above authors, Averroes remained a fixed point of reference in the species problematics, whether his position was rejected or not. It is important to note that being an Averroist in this context no longer implied automatic acceptance of the species doctrine, as it had done in the Middle Ages. In fact, in the last decade of the fifteenth century the first Averroist inspired refutations of the intelligible species appeared. Not only Averroes, but also Thomas and Albert the Great were frequently cited in discussions of intelligible species. Moreover, Greek commentators became authoritative. Notice, however, that Simplicius' work was not yet available to all participants in the debate<sup>151</sup>.

Earlier critical studies on the authors discussed in this section have often been misguided and unclear about their opinion on intelligible species. For example, Mahoney gives the impression that he is unable to decide whether Vernia rejected or accepted the in-

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<sup>149</sup> Cristoforo Marcello, for example, published his *Universalis de anima opus* after the treatises of Pomponazzi and Zimara, but most probably he was not acquainted with their works.

<sup>150</sup> See G. Di Napoli, *L'immortalità dell'anima nel Rinascimento*, 179-180; for Nifo's position, see E.P. Mahoney, "Agostino Nifo's early views on immortality", in *Journal of the History of Philosophy* 8(1970), 451-460; idem, "A note on Agostino Nifo", in *Philological Quarterly* 50(1971), 125-132.

<sup>151</sup> Achillini and Tiberio Bacilieri were not acquainted with Simplicius' *De anima* commentary; cf. also Nardi, *Saggi sul' aristotelismo padovano*, 412.

telligible species, tacitly assuming in the latter case that they are innate<sup>152</sup>. Moreover, Nardi gives contradictory evaluations of Achillini's position<sup>153</sup>, and assumes that Bacilieri, following Achillini, rejected the intelligible species—an interpretation that is not warranted unequivocally by the texts<sup>154</sup>. Both Mahoney and Nardi hold that all of the authors mentioned here were hostile to the species doctrine; in contrast, I believe that their position was not so straightforwardly negative. Indeed, during the period under examination a definite opposition against the intelligible species is found only in the early Nifo and in Bishop Cristoforo Marcello<sup>155</sup>. What binds this group of authors together is not hostility, but rather a certain scepticism about the need for intelligible species. Developing a number of different interpretations of the species, no one of them accepted without restriction the necessity of species as formal, mediating principles of intellectual knowledge.

Returning to my remarks on the secondary literature, I want to emphasize that the thesis of Nardi and Poppi, to the effect that Pomponazzi's *Quaestio de speciebus intelligibilibus* was directed mainly against a group of authors called 'Sigerians' by Nardi, cannot be accepted unconditionally<sup>156</sup>. Insofar as the works of Achillini and Bacilieri are concerned, this thesis seems to lack textual support. Moreover, the indicated group seems to lack coherence in matters psychological and epistemological, as is clear from Taiapietra's silence on the subject of species<sup>157</sup>.

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<sup>152</sup> See, "Albert the Great and the Studio Patavino", 550, and "The Greek Commentators Themistius and Simplicius and their influence on Renaissance Aristotelianism", 170-171, respectively.

<sup>153</sup> Cf. *Sigieri di Brabante*, 83-86, and *Saggi*, 230-33.

<sup>154</sup> See *infra*, subsection 3.

<sup>155</sup> Because of its indisputable importance, the development of Nifo's thought with regard to the intelligible species will be discussed in a separate section.

<sup>156</sup> B. Nardi, *Saggi*, 231, and A. Poppi, "La discussione sulla «species intelligibilis» nella scuola padovana del Cinquecento", 142.

<sup>157</sup> This problem was not analyzed in Hieronymus Taiapietra, *Summa divinarum ac naturalium difficilium quaestionum* (...), Venetiis 1506. For discussion of Taiapietra, see Nardi, *Saggi*, 281-312. Cf. also G. Di Napoli, *L'immortalità*, 201, who draws attention to Taiapietra's conviction that natural philosophy is not to be identified with Aristotle. A similar reservation is found in Crisostomo Javelli; cf. above, Introduction, § 1.3; see also E. Gilson, "L'affaire", 51-52, and Nardi, *L'alessandrismo*, 142.



### 2.1. Nicoletto Vernia

As a young man, Nicoletto Vernia was devoted to the Averroist reading of Aristotle, that there is a unique intellectual soul<sup>158</sup>. After 1489, however, clear-cut Averroism of this sort was no longer allowed. Vernia was forced to recant his earlier sympathies with the Commentator in the well-known *Quaestiones de pluritudine intellectus contra falsam et ab omni veritate remotam opinionem Averrois*<sup>159</sup>. In this treatise, Aristotle is no longer the key figure; instead, a variety of philosophical doctrines is discussed, collected from all times and schools, including Homer, the Presocratics, Plato, Virgil, the Neoplatonists, Arabic and Scholastic Peripatetics. In the preface, Vernia stated as his intention to discuss first the opinions of the philosophers, then those of Aristotle, and finally to state the truth according to Christian faith. He was convinced that Christian doctrine can be defended against all contradictory philosophical arguments<sup>160</sup>. Moreover, he believed that a temporal creation of the soul is compatible with Aristotle's teaching, and that it can be proved by natural arguments<sup>161</sup>. In fact Vernia, like Pico, sought to uncover the common truth underlying all philosophy and Christian faith<sup>162</sup>.

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<sup>158</sup> Nicoletto Vernia, 1420 Chieti—1499 Vicenza. Italian philosopher, student of Gaetano of Thiene in natural philosophy, whom he succeeded as professor of philosophy in 1465. On Vernia's career, see: Nardi, *Saggi*, 95-115; E.P. Mahoney, "Nicoletto Vernia and Agostino Nifo on Alexander of Aphrodisias: An unnoticed dispute", in *Rivista critica di storia della filosofia* 23(1968), 268-296, on p. 268-71. See also P. Sambin, "Intorno a Nicoletto Vernia", in *Rinascimento* 3(1952), 261-268; E.P. Mahoney, "Duns Scotus and the School of Padua around 1500", p. 218-21; idem, "Nicoletto Vernia on the soul and immortality", in *Philosophy and Humanism. Renaissance Essays in Honor of Paul Oskar Kristeller*, ed. E.P. Mahoney, Leiden 1976, 144-163; E. Kessler, "The intellective soul", 492-94.

<sup>159</sup> I have consulted the edition printed in Albert of Saxony, *Quaestiones super libros de physicu auscultatione*, Venetiis 1504, 82r-92r. Written in 1492, and approved by the examining bishop in 1499, this work was published for the first time in 1504.

<sup>160</sup> *Quaestiones*, 84ra.

<sup>161</sup> *Quaestiones*, 89vb.

<sup>162</sup> See Kessler, "The intellective soul", 494; E.P. Mahoney, "Nicoletto Vernia on the soul and immortality", 144, 153, and 155-56.

Vernia's attempt to bring the various schools in harmony makes it sometimes difficult to see what his own opinion was<sup>163</sup>. In particular, the few lines devoted to the intelligible species are puzzling, if anything. Mahoney, who spent decades to an intensive study of Vernia's philosophy, is convinced that in the *Quaestiones de pluritate intellectus* Vernia rejected the Thomistic intelligible species<sup>164</sup>, and that he did so with reference to Albert's authority<sup>165</sup>. Elsewhere, however, Mahoney claims to discern in Vernia a doctrine of innate intelligible species<sup>166</sup>. A closer look at Vernia's texts will help to elucidate these puzzling remarks.

As remarked above, Vernia's plan was to deal first with the opinions of the philosophers. In this context he examined a thesis, attributed to Avicenna, according to which the intellectual soul receives intelligible species that are not caused by the phantasms<sup>167</sup>. In the same discussion of philosophers' opinions, one page later, he remarked that according to Averroes there cannot be two intelligible species of the same thing<sup>168</sup>. Moreover, Vernia referred to Jandun for the thesis that, according to Averroist principles, the intelligible species cannot be conceived as coming to be or passing away<sup>169</sup>.

Crucial in Vernia's reflections on the intelligible species is the question whether they can be admitted on Averroist grounds<sup>170</sup>.

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<sup>163</sup> See, for example, his insistence on viewing Alexander as an orthodox author, discussed in Mahoney, "Nicoletto Vernia and Agostino Nifo on Alexander of Aphrodisias: An unnoticed dispute".

<sup>164</sup> Cf. Mahoney, "Saint Thomas and the School of Padua", 279. Vernia's objections were already referred to by Pomponazzi, *Quaestio de speciebus intelligibilibus*, 209.

<sup>165</sup> Mahoney, "Albert the Great and Studio Patavino", 549-50. Mahoney does not provide conclusive textual support, however. Instead, in note 46, he suggests that Apollinare Offredi, who cited Albert on the issue of intelligible species, may have inclined Vernia toward a greater interest in Albert's psychology. See for Offredi ch. V, § 3.3.

<sup>166</sup> Mahoney, "Greek commentators", 171.

<sup>167</sup> *Quaestiones*, 85va.

<sup>168</sup> *Quaestiones*, 86va; cf. 88rb. For the numerical paradox, see the Jandunian background (discussed in ch. IV, § 4.3), and the subsequent use of this weapon against the species doctrine by Nifo, analyzed in § 3.2 of this chapter.

<sup>169</sup> *Quaestiones*, 86vb. Jandun remained a fixed point of reference; see also Vernia's imitation of the epitheton assigned to Thomas by Jandun, as "melior Expositor inter Latinos"; cf. Mahoney, "Saint Thomas and the School of Padua", 278.

<sup>170</sup> See *Quaestiones*, 87va.

As transpires from this question, Averroes' authority on psychological issues, other than that of the soul's immortality, was still unmarred at the time. As we will see, in his discussion of the question Vernia seems to express a personal opinion, abandoning his original project of examining only the opinions of other philosophers. He tacitly assumed a well-defined (and traditional) conception of the species, namely, intelligible species as not innate, but acquired directly from sensible reality. He claimed that sense-dependent species are impossible, not only according to Averroes, but also according to Aristotle. The intellect, so he believed, is not only "impassibilis", but also 'nothing' before it actually knows. In support of this claim, Vernia quoted the famous Aristotelian text about the intellect's inalterability in *Physics*, VII, te. 20. As we have seen, Averroes' commentary on this passage was already interpreted by Burley as excluding (possible) intelligible species<sup>171</sup>. Although Vernia accepted Thomas' interpretation, namely, that in this passage Aristotle was following Plato rather than his own principles<sup>172</sup>, he nonetheless seemed keen to endorse the thesis of the intellect's inalterability. Support for this thesis was claimed from Albert and Simplicius, who stated:

(...) quod anima fit de novo sciens nulla novitate facta in ipsa quantum scilicet ad actum primum: sed per solam unionem ad phantasmata bene ordinata.<sup>173</sup>

Vernia attributed to Averroes the view that the intelligible species are unacceptable. He expressed his sympathy with this view, ignoring his original plan to state only the doctrines of other philosophers. Vernia was apparently dissatisfied with mere exposition, keen as he was on discovering a more comprehensive consensus. In this context, he submitted a similar point of general agreement in his interpretation (strongly inspired by Simplicius)

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<sup>171</sup> See ch. IV, § 4.2.

<sup>172</sup> See Thomas Aquinas, *In VIII libros Physicorum Aristotelis expositio*, ed. P.M. Maggiolo, Taurini-Romae 1965, VII.6.926: "Quod autem Aristoteles hic de acceptione scientiae dicit, videtur esse secundum Platoniam opinionem. (...) Nec est inconveniens quod Aristoteles hac opinione Platonis utatur. Est enim suae consuetudinis quod antequam probet suam sententiam, utatur sententia aliorum." In effect, Burley defended the same view.

<sup>173</sup> *Quaestiones*, 87va; for Albert's influence on Vernia, cf. Mahoney, "Albert the Great and the Studio Patavino", 546-50.

of the famous “de foris”-passage in *On the generation of animals*, II.3, of which he gave a reading that unites Plato, Aristotle and Averroes:

Pro solutione aliarum ratione sciendum quod cum de foris etiam apud Aristotelem animus veniat: est ergo antequam uniatur, cum de foris advenire nihil sit nisi per se esse: & prius preexistere. Cum ergo ante corpora sit ab eterno: quis negabit esse scientia plenum & rerum omnium intelligibilium species in se habere. Oblivisci autem earum ut dixi: cum corpori unitur ob nimium nature fluxum.<sup>174</sup>

Vernia's line of thought may be summarized as follows. Refuting Averroes' position on the unique intellect, he argued in passing that neither on Aristotelian nor on Averroistic grounds there can be intelligible species caused by the phantasms, as this would entail an intolerable alteration of the intellect previous to its act. By contrast, innate intelligible species, which the soul ‘forgets’ when it is embodied, are acceptable.

In view of his Neoplatonic psychology, it is surprising to see that elsewhere Vernia also referred to the Thomistic doctrine of the species (albeit incidentally and in a somewhat peculiar context). Once it had been established that the creation of the soul does not contradict Aristotelian noetics, which in fact assumed an intellect descended “de foris”<sup>175</sup>, Vernia felt obliged to address the problem of the multiplication or individuation of the intellectual souls<sup>176</sup>. He solved this problem by comparing human minds, insofar as they are joined to bodies, to intelligible species received by the intellect: these species are singular in being, but universal “in repraesentando”<sup>177</sup>. According to Vernia, the key to understanding this twofold qualification lies in the fact that intelligible species owe their universal nature to the agent intellect

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<sup>174</sup> *Quaestiones*, 88ra. On this passage, see also Mahoney's conclusion in “The Greek commentators”, p. 171: “According to the a priori ordering, the soul first knows itself and the things above it, then it somehow descends from itself to know the intelligible species that are innate to it, and lastly it flows wholly to the outside and thereby comes to know accidents and individual things. On the other hand, according to the a posteriori ordering, the soul first knows sensible things through the imagination, and it is then aroused by other sensible things to return to the innate intelligible species that it had forgotten (...)”.

<sup>175</sup> *Quaestiones*, 91ra.

<sup>176</sup> *Quaestiones*, 91vb.

<sup>177</sup> See Thomas Aquinas, *In II Sent.*, dist. 17, q. 2, a. 1, ad 3um.

and their singular being to the reception in the possible intellect<sup>178</sup>. Vernia argued that the human intellect, like the species, has a nature with both universal and singular aspects, being situated between the material and the separate entities<sup>179</sup>.

Thus, the Thomistic conception of the intelligible species was rejected in cognitive psychology, because it was seen as a menace to the integrity of the intellect. At the same time, however, it supplied elements for a metaphysical foundation of a philosophically acceptable doctrine about the creation of the individual soul.

## 2.2. Alessandro Achillini

Vernia's work after the 1489 enactment is marked by a strongly syncretistic tendency and an increasing alienation from Averroes' psychology, yet without completely breaking with the latter. At first glance, Alessandro Achillini<sup>180</sup>, who was not heavily influenced by the Neoplatonic commentaries<sup>181</sup>, would seem to have been a faithful follower of the Commentator of Cordova. Yet, he did not accept Averroes' psychology unconditionally<sup>182</sup>. He was influenced in particular by Siger of Brabant's interpretation of Averroes' noetics<sup>183</sup>. Moreover, Ockham's influence on his epistemology is evident<sup>184</sup>.

<sup>178</sup> *Quaestiones*, 91vb.

<sup>179</sup> Cf. Ficino, *Theologica Platonica*, I.1, 79, for the view of man as "vinculum totius universi"; Thomas, *Summa contra Gentiles*, II, c. 68.1453: "Et inde est quod anima intellectualis dicitur esse quasi quidam *horizon et confinium* corporeorum et incorporeorum, (...)"; see also *Liber de causis*, prop. II (22) and IX (84), in Thomas Aquinas, *In librum De Causis expositio*, ed. C. Pera, Torino 1955.

<sup>180</sup> Alessandro Achillini, 1463—1512. Bolognese philosopher and physician; was responsible for a revival of interest in William of Ockham in Bologna around 1500. For discussion, see Nardi *Saggi*, 225-79; H.S. Matsen, "The influence of Duns Scotus and his followers on the philosophy of Alessandro Achillini", in *Regnum hominis et regnum Dei*, Roma 1978, 229-247; Kessler, "The intellectual soul", 495.

<sup>181</sup> He was not acquainted with Simplicius' *De anima* commentary; cf. Nardi, *Saggi*, 412.

<sup>182</sup> Like most medieval authors, Achillini acknowledged that Averroes' interpretation contrasts with Catholic faith; see also below.

<sup>183</sup> See, Nardi, *Sigieri*, 45-90.

<sup>184</sup> Cf. H.S. Matsen, *Alessandro Achillini (1463-1512) and his Doctrine of "Universals" and "Transcendentals"*. A Study in Renaissance Ockhamism, Lewisburg-London 1974; idem, "Alessandro Achillini (1463-1512) and

Achillini's philosophical strategy was different from that of authors such as Vernia, who devoted most of their energy to finding a philosophical consensus, as well as from that of his medieval predecessors. The fourteenth- and fifteenth-century masters of arts had usually discussed the species in a framework that for its themes and terminology depended essentially on the theological discussions of their days<sup>185</sup>. Achillini was doubtless heir to the formal, analytical way of argument used by Jandun's Italian disciples. For the development of his philosophical psychology, however, he adopted other criteria: whether a given thesis or conception is tenable, depends strictly on its logical consistence with the central tenets of Aristotelian philosophy and Averroes' interpretation of it<sup>186</sup>.

Achillini's position with regard to the intelligible species, like Vernia's, has given rise to a number of misunderstandings. Thus, Nardi initially attributes to him a theory of abstraction of species<sup>187</sup>, but elsewhere he claims that Achillini rejected the intelligible species<sup>188</sup>. A close reading of the texts will again reveal that these misunderstandings were caused to a certain extent by Achillini himself.

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Ockhamism at Bologna (1490-1500)", in *Journal of the History of Philosophy* 13(1975), 437-45.

<sup>185</sup> The impact of themes derived from the Augustinian objections against Jandun's discussion of the origin of the species, and against that of his disciples, is undeniable. This tendency becomes very clear in the controversy about the precise relation between the agent intellect and the sensory representational devices. For example, Taddheus' argumentation on this issue was strictly philosophical, but the influence of neo-Augustinian opposition against a sense-bound cognitive psychology is apparent from the various opinions discussed by him.

<sup>186</sup> An early example of a similar approach to Aristotelian psychology can be found in the controversy about the correct interpretation of Aristotle, *Physics*, VII, te./co. 20, between Averroes, Thomas, Burley, and Vernia.

<sup>187</sup> See Nardi, *Sigieri*, 85-86, on the interpretation of *De intelligentiis*, 19va-b (in *Opera omnia*, Venetiis 1545, 1-22r), where Achillini analyzed the "copulatio".

<sup>188</sup> Cf. Nardi, *Saggi*, 230, where Nardi reduced Achillini's presumed rejection, on f. 13ra, to his adopting Averroes' famous interpretation of *Physics*, VII, te. 20; the latter passage was not quoted by Achillini in this context, however. See also *Saggi*, 328, where Nardi suggested an affinity between Achillini, Henry of Ghent and Baconthorpe, who all addressed this issue.

In *Quaestiones quolibeta de intelligentiis* (1494)<sup>189</sup>, Achillini initially accepted the intelligible species without reservation, endorsing a type of cognitive psychology similar to that of medieval precursors such as Jandun. Indeed, in this work the species played a crucial role in the proof of the existence of a unique intellect<sup>190</sup>. If various things belonging to the same classificatory species are known by means of a single intelligible species, then the knowing intellect must be one, too<sup>191</sup>. Elsewhere, apparently endorsing the species doctrine, Achillini drew a distinction between intellection, species, and object cognized<sup>192</sup>.

It was not until the analysis of the intellect's potentiality and receptivity with regard to accidents that Achillini came to depart from the traditional doctrine of species. The broader context of this analysis is that of the generation of the "intellectus speculativus", that is, the possible intellect insofar as it is actualized<sup>193</sup>. Here it becomes clear that Achillini (at least in *De intelligentiis*) did not endorse a rigid form of Averroism<sup>194</sup>.

An adequate understanding of Achillini's view on intelligible species requires us to consider in more detail the context in which he examined the issue. Initially, Achillini stated that according to Aristotle the intellect cannot be touched by accidents. However, he also believed that this view is not correct, or, rather, he believed that it is not completely acceptable<sup>195</sup>. Now, the arguments for the claim that the intellect does not receive any intelligible species

<sup>189</sup> I have consulted the edition in *Opera omnia*, Venetiis 1545, 1-22r.

<sup>190</sup> This argument was already used by Siger (ch. IV, § 4.2) and Jandun, *Super libros de anima*, III, q. 10, col. 279, 283-4. Cf. also Nifo, analyzed in the next section.

<sup>191</sup> *De intelligentiis*, 11rb-vb.

<sup>192</sup> *De intelligentiis*, 12ra.

<sup>193</sup> Already in the Middle Ages, the species issue was discussed in these terms; cf. B. Bazán, "Intellectum Speculativum: Averroes, Thomas Aquinas, and Siger of Brabant on the intelligible object", in *Journal of the History of Philosophy* 19(1981), 425-446. See also Pomponazzi's analysis, which will be discussed in the next chapter.

<sup>194</sup> In *De orbibus*, Achillini defended instead an orthodox Averroism; see Nardi, *Saggi*, 228-29.

<sup>195</sup> *De intelligentiis*, 13ra: "Hic aliquantulum morabimur propter difficultatem, quae tangitur, an intellectus possibilis subiiciatur accidentibus. Respondeo igitur per duo dicta. Primum opinio Aristotelis est quod non. Secundum, dicta opinio non est vera." Achillini was speaking of Aristotle, but in fact he meant Averroes; this is clear from the conclusion of this excursus, see 13vb.

were advanced as confirming the impossibility of the intellect's being touched by accidents<sup>196</sup>. Notice, however, that this claim in its radical form was attributed to Averroes at the end of the section. Three remarks are in order here. In the first place, Achillini followed Averroes' interpretation of Peripatetic psychology, but at the same time he wanted to avoid heresy. Indeed, sometimes his search for a feasible interpretation of Aristotle was only pretense. He gave extensive lists of arguments for positions held by Averroes, while eventually endorsing the contrary. Secondly, Achillini's apparent fidelity to the Commentator eventually revealed itself to be less than absolute. At first sight, Achillini seemed to be following a traditional type of Averroism, but in reality he adhered to a medieval tradition going back to Siger of Brabant, who had tried to adapt Averroes' psychology to the requirements of individual knowledge<sup>197</sup>. Achillini held that the unique intellect is both an assisting form, using man as instrument for its knowledge, and an informing form which gives man a specific essence and which supplies the subject of intellection to the individual being<sup>198</sup>. Finally, the procedure of presenting two contradictory opinions is a frequently used technique in *De intelligentiis*. Most of the time it does not mean that the positions presented, which are initially qualified as true or false, will be automatically accepted or rejected by the author. Rather, Achillini used this scheme as a dialectical tool to work out his own position. Thus, in the particular case at hand, his intention was not to contradict Aristotle, but to refute the views of the possible intellect's complete immobility.

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<sup>196</sup> Achillini refuted the intellectual reception of accidents in three ways. The first two were dubbed the "via recipientis" and the "via recipiendi". The arguments against intelligible species were presented under the heading "via recepti". See *De intelligentiis*, 13rab.

<sup>197</sup> See in particular the later psychological work of Siger. For discussion, see E.P. Mahoney, "Saint Thomas and Siger of Brabant revisited", in *Review of Metaphysics* 27(1973-74), 531-553.

<sup>198</sup> See, in particular, *De intelligentiis*, quodlibeta III-IV, extensively discussed by Nardi in *Sigieri di Brabante*, 45-90, and in *Saggi*, 225-79. Surprisingly, Zabarella referred to this opinion; cf. *De mente agente*, in *De rebus naturalibus*, Coloniae 1602, 964; for discussion, see Nardi, *Sigieri*, 75.



The first argument against the reception of intelligible species has the form of a paradox. Achillini put forward a radical version of the generally accepted view that the possible intellect is nothing of what it receives. In order to be able to receive, that is, in order to know the forms of material reality, the intellect must be conceived as strictly non-material. Now, if the intellect is viewed as receiving intelligible species, which are surely detached from the material world, it would be a material form, for it is supposed to be anything except what it receives. This paradox thus rules out the possibility of an intelligible species that is not the “forma comprehensa” itself<sup>199</sup>.

At first sight, the second argument seems rather unoriginal. Yet, in this explicit form it had not been used before: if the intellect receives intelligible species, it would be in act before knowing<sup>200</sup>. A possible response might be that the problem can be solved by identifying the species with the object known, namely, the “forma comprehensa”<sup>201</sup>. This last suggestion is interesting from a historical point of view. Medieval opponents of the species, insofar as it was distinguished *realiter* from both mental act and cognitive object, generally proposed to abolish the distinction between species and act.

The identification of cognitive act and mental representation opened up a number of different doctrinal solutions for the origin of the species-intellection. Some authors insisted on the crucial role of sensible object and inner senses in the generation of knowledge<sup>202</sup>. Other authors, inspired by Augustine’s psychological activism, maintained that the intellect produces the species by virtue of its intrinsic powers<sup>203</sup>. Still others identified the species with the

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<sup>199</sup> *De intelligentiis*, 13rb: “Ergo non repugnat intellectum possibilem esse formam materialem, et esse cognoscitivum materialium, quia intellectus possibilis non recipit materialia, sed speciem intelligibilem realiter & specificè distinctam à re materiali, et ab intellectu possibili.”

<sup>200</sup> See already the positions of Godfrey of Fontaines (ch. III, § 3.3) and John Baconthorpe (ch. IV, § 2.2): the first thing received by the intellect is the mental act.

<sup>201</sup> *De intelligentiis*, 13rb-va.

<sup>202</sup> See, for example, John Baconthorpe (ch. IV, § 2.2) and Radulphus Brito (ch. III, § 3.5); cf. also Thomas Sutton (ch. IV, § 1.4), who tended to assimilate species and cognitive act.

<sup>203</sup> See, in particular, Matthew of Aquasparta, discussed in ch. III, § 4.1.

effects of mental acts<sup>204</sup>. Assimilating species and cognitive object, Achillini, by contrast, seemed to associate himself (whether consciously or not) with certain ancient Latin and medieval Neoplatonics<sup>205</sup>. More probably, however, he was trying to restore a form of direct realism, implicit in the Arabic doctrine of intention, and argued for by Siger and other post-Thomas masters of arts<sup>206</sup>.

Achillini's third argument makes implicit reference to the noetics of Alexander of Aphrodisias: if the intelligible species is an "ens immateriale", then, logically, it would be an actually knowing entity. Indeed, an immaterial being in Peripatetic philosophy is either a potential or an actual intellect<sup>207</sup>.

The final objection is based on the contrary assumption that the species are viewed as singular accidents. Conceived in this fashion, it is difficult to imagine how they can be produced. Qua singular beings they cannot be produced by a universal agent intellect. Nor is their generation by "intentiones imaginatae" possible, as this would nullify the distinction between singular and universal contents. But even when these problems are waived and a form of sensory causation is admitted, other problems inevitably arise. Granted that the possible intellect can be influenced by sensible images, this intellect would *de facto* be reduced to the status of imagination<sup>208</sup>.

Arriving at this point of the argument, the reader is inclined to think that Achillini rejected the intelligible species, or that he assimilated them to the known form, as suggested above.

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<sup>204</sup> See Peter Olivi (ch. III, § 3.4) and Gregory of Rimini (ch. IV, 3.4).

<sup>205</sup> Cf. ch. I, § 4.1 and ch III, § 5.

<sup>206</sup> See ch. I, § 3 and ch. III, § 2.1-2.

<sup>207</sup> *De intelligentiis*, 13va; cf. Alexander, *De anima*, ed. Bruns, 90.

<sup>208</sup> *De intelligentiis*, 13va. Sextus Empiricus used a similar argument in his critique of the Stoic cognitive impression; cf. *Adv. Math.*, VII.381: "But let it be granted also that presentation is an impression of the regent part; yet since such an impression is not announced to the regent part otherwise than through the sense (...), I want to know whether the alteration that takes place in the regent part is of the same sort as that of the sense, or different. And if it is the same, since each of the senses is irrational, the regent part too, being altered, will be irrational and in no respect different from sense; while if the alteration is different, it will not receive the presented object exactly as it exists, but the existent object will be one thing and the presentation formed in the regent part something different. And this again is absurd." Cf. *idem*, 382-90.

Surprisingly, however, in his final conclusion Achillini connected this interpretation of the species to a solution that had been formulated several times before in the Middle Ages, namely, that the intelligible species is a mental act or intellectual habit<sup>209</sup>. Against the first opinion (contrary to the reception of accidents in the intellect) Achillini argued that the possible intellect is informed by accidents, although these are not to be viewed as “inherentia”. The human mind receives species or habits as “locatum in loco”. Intelligible species or habits, representing things in the intellect, possess a diminished kind of being:

De specie intelligibili actu intelligendi, aut habitu intellectus: dico quod sunt existentiae diminutae rerum quae sunt in anima, sicut locatum in loco. (...) Quamvis igitur intellectus sit informatus accidentibus, non propter hoc illa sibi inhaerent, & haec informatio sine inherentia sufficit ad verificandum praedicationes accidentales & denominationes illorum de anima.<sup>210</sup>

Identifying the species with the thing to be known insofar as present in the mind qua diminished being, Achillini referred to yet another position developed by a number of medieval authors, which was sometimes endorsed as an alternative to the species doctrine<sup>211</sup>.

After the formulation of his own opinion on the issue, Achillini presented a series of arguments purporting to show that the intellect may receive accidents. On the basis of a passage from Aristotle's *Ethics*, Achillini argued that there exists only a “distinctionem rationem” between act, habit, and species<sup>212</sup>. Then a

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<sup>209</sup> See ch. III, § 2.2, § 3.2-5, and ch. IV, § 2.2 and § 4.1.

<sup>210</sup> *De intelligentiis*, 13va. The remark concerning the “locatum in loco” may be seen as a direct reference to Albert's opinion concerning the modalities of the existence of intelligible species in the mind; see ch. II, § 2.1. See also *De distinctionibus*, 166ra: according to Averroes, the “res intelligibilis” is identical with the “species intelligibilis”, the “intellectus speculativus”, and the “intellectio”. Chronologically, an immediate anticipation of this view can be traced in Argyropoulos' identification of species and intellection; cf. V. Brown, “Giovanni Argyropulo on the agent intellect: an edition of ms. Magliabecchi V 42 (ff. 224-228v)”, 166.

<sup>211</sup> See ch. IV, § 1.5.

<sup>212</sup> *De intelligentiis*, 13vb: “Ad tertium ostendit illa ratio distinctionem rationis, quae inter actum cognitionem & speciem, (...) Ex quo patet quod cum actus, & habitus, & species sint quodammodo idem: quod sufficienter enumeravit Aristo. 2. ethi. cap. 5. quae sunt in anima tantum tria enumerando, scilicet passiones, potentias, & habitus, quoniam data essentia intellectus ipsa habet potentias, quibus potest

final series of arguments, namely those for a real distinction between act, habit, and species, is refuted<sup>213</sup>.

Summarizing the above, we may say that Achillini rejected the intelligible species conceived as singular accident, produced by and *realiter* distinct from the formal structure of material, sensible reality. However, species can be accepted if they are conceived as the presence of the material form in the intellect, that is, as the intellectual act itself. In other words, Achillini implicitly recognized that the material form as such is not knowable. In a certain sense, it is undeniably true (as Duns Scotus had argued before) that the material form must be presented to the intellect in a form accessible to the intellect. At the same time, however, Achillini rejected the hypothesis of a mediating entity or formal principle, as it would interfere with the coherence of the cognitive act. Achillini therefore accepted the species on condition that it is viewed as identical with the form-like structure of sensible reality insofar as present to the mind<sup>214</sup>. Eventually, Achillini decided that Averroes' view (that the intellect does not receive and cannot contain any accidents) is based on the wrong grounds; hence he decided to endorse the opposite of the Commentator's conclusions<sup>215</sup>.

The overall impression of Achillini's 'solution' of the species issue is that it was (at least in part) a tactical concession to a more traditional reading of Aristotle, which at that time had recently been rediscovered. Without downright rejecting the species, but rather assimilating it to content, act and habit, this solution was one of diplomacy. At the same time, it maintained the essence of Peripatetic psychology: the intimate bond of mind and object.

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agere vel pati. Secundo habitus habet, qui sunt operationes, species &c. tertio habet passionem, quae sunt gaudium tristitia etc."

<sup>213</sup> *De intelligentiis*, 13vb.

<sup>214</sup> See also *De distinctionibus*, in *Opera omnia*, 70vb: "(...) in esse intellecto forma est species, sed in esse reali, ipsa est pars individui, (...)".

<sup>215</sup> *De intelligentiis*, 13vb: "Sed quia in hoc quaesito Commentator ad suum falsum fundamentum de unitate intellectus consequenter loquitur: posito enim intellectu uno non multiplicato: ponit accidentia non inhaerere illi. Nos autem oppositum illius fundamenti tenemus. Ideo non oportet nos concordare in conclusione sequente ex illo." For Achillini's peculiar appreciation of Averroism, I refer again to the valuable studies of Nardi; see *supra*.

### 2.3. Tiberio Bacilieri

Tiberio Bacilieri's<sup>216</sup> position with regard to intelligible species was closely connected to that of his master Achillini. Bacilieri's psychological work was even more explicit in avoiding any direct confrontation with the authoritative interpretators of Peripatetic psychology who endorsed the species doctrine. In his commentary on the second book of *De anima*, Bacilieri accepted the "species visibilis in medio" and its multiplication, thus assenting to the theory developed by medieval perspectivistic optics<sup>217</sup>. In his exposition of Book III, discussing the question whether the intellection coincides with the "res intellecta", he addressed the issue of the intelligible species<sup>218</sup>.

Having established that some authors argue for a real distinction between the cognitive act and its object, Bacilieri remarked discretely that it is not his intention to contradict the generally accepted opinion which, based on this distinction, argues for the existence of intelligible species:

(...) ergo intellectio realiter a re intellecta; relinquunt auctoritates in favorem huius partis quibus prolatur dari species intelligibiles, quas quidem nos non negamus.<sup>219</sup>

Bacilieri believed that there is only a "distinctio rationis" between species and known forms, however. Granting that substantial and accidental forms can perfect the human intellect, there is no objection against calling them species, so he argued. When a person actually knows, these species coincide with the actual intellection, and when this is not the case, the species have the status of habits or dispositions<sup>220</sup>. Thus, the identity of the intellect and the thing

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<sup>216</sup> Tiberio Bacilieri, 1461 (?) Bologna—1511 (?). Studied under Alessandro Achillini at the University of Bologna; taught philosophy in Padua, Pavia, and Bologna between 1500-1511. For discussion, see: Nardi, *Sigieri*, 132-151, where Bacilieri is qualified as Sigerian Averroist; idem, *Saggi*, 226-7, where Nardi suggests on pp. 231 and 288, that Bacilieri, like Achillini, is a target of Pomponazzi's criticisms in his *Quaestio de speciebus intelligibilibus*. Also in *Saggi*, pp. 227 and 324, Nardi presents Bacilieri as Sigerian Averroist. Cf. also, Di Napoli, *L'immortalità*, 199-201.

<sup>217</sup> Tiberius Bacilerius Bononiensis, *Lectura in tres libros de anima & parva naturalia*, Papiæ 1508, 35ra-vb.

<sup>218</sup> *Lectura in de anima*, 53rb.

<sup>219</sup> *Lectura in de anima*, 53va.

<sup>220</sup> *Lectura in de anima*, 53va-b.

known implies that the species or intellection cannot be viewed as a “forma inhaerens” really distinct from the intellect<sup>221</sup>. Now, Bacilieri continued, the senses and the intellect know the same form, which “in re” possesses an “esse reale”. Although this form has the status of an “intentio” in the senses and the intellect, real and known forms must be considered as “in esse idem realiter”<sup>222</sup>.

With his emphasis on the univocal ontological bonds between object and intellect, Bacilieri supported the coherence of the perceptual and the cognitive act<sup>223</sup>. If the “auctoritates” oblige one to admit the species, then straight opposition makes little or no sense, so Bacilieri seemed to argue. On no account, however, should a real distinction be admitted between the species as mental representation or cognitive act and the material forms as actually known objects. Species denote only the specific status of the material forms in the intellect<sup>224</sup>. By this token, Bacilieri is forced to admit a certain dissent from the “doctores in via communi”:

(...) quin imo secundum viam communem distinguendo ens spirituale contra ens reale: concederetur conclusio nostra: in hoc tamen dissentio a doctoribus de via communi: quia ipsi species in sensu & intellectu concedunt esse entia realia formaliter: ego vero eas facio entia rationis formaliter & entia realia tantum identice.<sup>225</sup>

This different point of view is no reason for Bacilieri to reject the notion of intelligible species as such, as appears from his characterization of the intellect as both “subiectum” and “locus” of the intelligible species<sup>226</sup>.

To wind up Bacilieri’s theory of mental representation, I now turn to his view of the function of the agent intellect. It is interest-

<sup>221</sup> *Lectura in de anima*, 53vb.

<sup>222</sup> *Lectura in de anima*, 54ra and 62rb.

<sup>223</sup> As regards this view, also Bacilieri’s position, like that of Achillini, was closely related to a more direct form of realism such as found in Siger and the early Parisian Averroists; cf. ch. III, § 2.

<sup>224</sup> Cf. *Lectura*, 62ra: “Rursus forma lapidis est in intellectu & est ratio cognoscendi & forma lapidis & totum lapidem & colligitur ex commento .38. quod species intelligibilis non distinguitur realiter a re representata per ipsam”.

<sup>225</sup> *Lectura*, 54ra. The qualification “entia rationis” suggests that species are similar to universals (in their nominalist guise). For an assimilation of intelligible species to universals, see Heymeric de Campo (ch. V, § 2.2).

<sup>226</sup> *Lectura*, 54rb. Albert regarded the intellect merely as “locus” of mental contents; cf. ch. II, § 2.1. See also Offredi’s reference to Albert on this issue, in ch. V, § 3.3.

ing to note that in this context the intelligible species has disappeared. Bacilieri did not examine whether the agent intellect operates in any sense upon the possible intellect; he concentrated instead on the agent intellect's action with respect to the "intentiones imaginatas". He remarked that the imaginative intentions, by virtue of the agent intellect's action, acquire an "esse spirituale"<sup>227</sup>. In connection with this view Bacilieri raised the question whether the phantasm must be considered as the immediate productive principle of the intellection, implicitly referring back to Jandun's discussion of the relationship between sensory images and agent intellect. If two principles together cause a single effect, Bacilieri argued, then the immediate and principal cause is the one most similar to the effect. In the case of mental acts this should be the phantasm. However, according to Averroes, the intellective act would then become a sort of "sentire"<sup>228</sup>. Therefore, the main cause of the intellection must be the agent intellect, which, bringing about this act, actualizes the possible intellect<sup>229</sup>.

Bacilieri's cognitive psychology endorsed a form of Averroism that was significantly similar to the epistemological speculation current at the Parisian Faculty of Arts during the last decades of the thirteenth century<sup>230</sup>. This is probably connected with

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<sup>227</sup> *Lectura*, 57rb: "ponitur intellectus agens ex parte obiecti: qui tamen sepe dicitur agere in possibilem: quia agendo in obiectum: est ac si ageret in possibilem: ultima tamen eius actio est abstrahere & facere intentiones imaginatas intellectas in potentia intellectas in actu: unde in universali duo inveniuntur: materiale: et est forma translata: formale & est esse spirituale datum forme ab intellectu agente." See Averroes, *Compendium libri Aristotelis De sensu et sensato*, in Averroes, *Compendia librorum Aristotelis qui Parva Naturalia vocantur*, ed. A.L. Shields & H. Blumberg, Cambridge-Ma 1949, 30: "Et ideo dicitur quod isti sensus non comprehendunt intentiones sensibilibus nisi abstractas a materia: non enim apprehendunt intentionem coloris nisi abstractam a materia; et similiter olfactus et saporis et alii sensus sensibilibus aliorum. Et cum declaratum est hanc comprehensionem esse spiritualem, dicamus negantibus sensus comprehendere per medium quod intentiones quas anima comprehendit spiritualiter, quedam sunt universales, scilicet intelligibilia, et quedam particulares, scilicet sensibilia."

<sup>228</sup> *Lectura*, 60ra. In reality, this solution was suggested by Jandun for the production of the intelligible species, although he did not regard it as completely satisfactory; see ch. IV, § 4.3. Notice that Bacilieri, identifying species and act, applied this solution scheme to the issue of the generation of the mental act.

<sup>229</sup> *Lectura*, 60ra. See also the position defended by Alphonsus Vargas, examined in ch. IV, § 3.4.

<sup>230</sup> See ch. III, § 2.2.

Bacilieri's interest in Siger<sup>231</sup>, whose influence is present, for example, in Bacilieri's emphasis on the coherence of the cognitive act, grounded in the identity of the sensible and intellective object. In fact, Bacilieri allowed only a distinction between different modes of being of the material form in sensible reality, on the one hand, and in the senses and the mind, on the other hand<sup>232</sup>. Therefore, the notion of intelligible species was acceptable for him only when identified with "intentio", that is, with that aspect of reality which the mind effectively grasps. As mental item the species constitutes the cognitive act.

#### 2.4. *Cristoforo Marcello*

An explicit refutation of intelligible species is found in the encyclopedia-like *Universalis de anima traditionis opus* by Cristoforo Marcello<sup>233</sup>. In ch. 33 of the fifth book, Marcello gave a number of arguments against the species, the majority of which is already known from the medieval polemics. I confine myself to a brief review here.

Once the intellect comes in possession of the species, it would necessarily know forever. Both the species' origin in sensible reality and its singularity obstruct a possible knowledge of the universal. If it is granted that the same thing can be known with more than one species, an infinite regress threatens<sup>234</sup>. Moreover, on Aristotelian principles it is impossible that different accidents are actually located in the same "subiectum". Already Averroes stated in his commentary on *Physics*, VII, te. 15, that the agent intellect does not create something new. Finally, an eternal entity such as the intellect cannot employ a temporal instrument such as the phantasm<sup>235</sup>.

<sup>231</sup> See ch. III, § 2.1, and Nardi, *Sigieri*, passim

<sup>232</sup> However, Siger distinguished between a "forma intelligibilis", on the one hand, and intention and intelligible species, on the other hand; cf. ch. III, § 2.1.

<sup>233</sup> Cristoforo Marcello, † 1527. Archbishop of Corfù; wrote a polemical work against Luther, and commentaries to the Psalms and liturgical treatises.

<sup>234</sup> Cf. Jandun, *Super libros de anima*, III, q. 10, cols. 279, 283-4, and in particular the arguments formulated by Nifo in *Liber de intellectu*, 43vab.

<sup>235</sup> Christophorus Marcellus, *Universalis de anima traditionis opus*, Venetiis 1508, 235r-v.



Marcello submitted that the arguments in favour of the species are based on a wrong interpretation of Averroes<sup>236</sup>. In its general orientation, Marcello's psychology was Neoplatonic. His objections and arguments against the species bear the mark of medieval opponents of the species, notably including Henry of Ghent and William of Ockham<sup>237</sup>. Marcello was primarily interested in maintaining a sharp distinction between the separate (or at least, separable) intellect and the inferior, human cognitive faculties. The fact that he generally described this intellect as "mens" may indicate the influence of Platonic noetics, with which he was probably acquainted through the Ficinian commentaries and translations<sup>238</sup>.

As pointed out above, Marcello's polemics against the doctrine of species was deeply influenced by Neoplatonic, or more precisely, by neo-Augustinian views. His notion of the species as originating from the phantasy and eventually reaching the intellect implied that either the intellect can phantasize, or that the phantasy is able to develop intellectual knowledge<sup>239</sup>. This sharp demarcation between sensitive and intellectual capabilities was connected with an innatist conception of the knowledge of the separate intellect. Indeed, the latter does not join the human soul in order to receive something<sup>240</sup>. This again bears witness to the fact that it was Plotinus rather than Averroes who inspired Marcello's view of the thinking mind:

Mens igitur non propterea nobis iniungitur quia nostri promptuaria sit neque a nobis quicquam suscipiat sed potius quoniam prae-

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<sup>236</sup> See *De anima opus*, 236r.

<sup>237</sup> See ch. III, § 3 and ch. IV, § 2 and 3.

<sup>238</sup> See, in particular, Ficino's translations and commentaries on Plato and Plotinus; see also the Latin translation of Themistius, *Paraphrasis in De anima*.

<sup>239</sup> *De anima opus*, 236r: "Rursus si phantasiae & intellectus unica fuerit species una etiam operatio erit. Aut igitur intellectus phantasiabitur aut phantasia intelliget." That phantasy and intellect shared the same species was a doctrine which some post-Jandun Averroists attributed, wrongly, to Giles of Rome; cf. ch. IV, § 4.4 and 6. Sextus Empiricus used a similar argument in his critique of the Stoic cognitive impression; cf. *Adv. Math.*, VII.381 (quoted in note 208), and 382-90.

<sup>240</sup> In fact, the habit or memory was assigned exclusively to the "cogatrix"; see *De anima opus*, 236r. Cf. also the later critique of intellectual memory by Buccaferrea and others.

beat quum enim eandem penitus naturam intueamur quam in seipsam considerat nos intelligere facit.<sup>241</sup>

For the “copulatio” of the universal mind and mankind no species are needed. What is presented by the “cogitatrix”, is given universality by the unique mind<sup>242</sup>. In chapter 34 of the same book, Marcello took even greater distance from the form of Averroism inspired on Jandun, which was spreading at that time:

Hos quoque posteriores summe despiciunt & in averoica familia delirantes appellant quum novas rerum imagines a cogitatrice intellectui impressas asseverent.<sup>243</sup>

Notice in this context that Marcello thought it unwise to consider philosophical truth as absolute, as is clear from the title of chapter 37<sup>244</sup>. According to the doctrine of Christian faith the possible and the agent intellect must be seen as “vires animae”, and what is produced by the latter is received by the former<sup>245</sup>. Yet, Marcello did not unconditionally surrender to the official psychology of his time. He tried to argue for the reasonableness of the reception of species within his own doctrinal framework:

Ex quibus patibilem quoque intellectum in speciei adventu aliquid operari oportere monemus. Animadversio etenim illa non nisi actio quaedam est atque ideo vere immanentem quae intelligentia est procreat actionem. Quo fit ut vis illa non in mera patiendi facultate consistat sed & patiatur & agat. Species vero illas accidentia spiritualia quaedam fuisse fatemur quae non ex mentis potentia deducuntur sed extrinsecus dumtaxat accedunt suapteque natura defectiles evadunt quum ab eiusmodi agente proveniant causa.<sup>246</sup>

Although the species enter the human intellect “ab extrinseco”, this does not imply that the mind is completely passive. In fact, the reception of an “imago rei” is indistinguishable from the cognitive act itself, *pace* “aetatis nostrae nonnulli philosophantes”. Marcello’s arrows here were doubtless directed against the followers of

<sup>241</sup> *De anima opus*, 236r-v.

<sup>242</sup> *De anima opus*, 236v.

<sup>243</sup> *De anima opus*, 236v-237r.

<sup>244</sup> *De anima opus*, 238v: “Secundum fidei fundamenta utrumque intellectum vim animae non substantiam fore patibilemque quicquam speciem scilicet ab intellectione distinctam ab intellectu agente suscipere.”

<sup>245</sup> See, *De anima opus*, cap. XXXI, 234r.

<sup>246</sup> *De anima opus*, 238v-239r.

Jandun, as is also clear from the ensuing discussion<sup>247</sup>. Accordingly, Marcello insisted on a direct relation between the phantasy and the intellect, excluding *ipso facto* all mediating species<sup>248</sup>.

In accordance with his general outlook, Marcello also ruled out the possibility that phantasms play an effective causal role in the generation of intelligible species as spiritual representations<sup>249</sup>. In chapter 35 he examined the view, based on “fidelium dogmata”, that the mental act, originating from an intelligible species, is a product of the co-operation between sensory images and agent intellect. Marcello believed that phantasms play no positive causal role in the generation of the (immanent and immaterial) mental act. Also in the generation of intelligible species (provided that they exist<sup>250</sup>), the impact of phantasms can only be marginal. Marcello also challenged the weaker claim that phantasms may have an instrumental or partial causal role in the generation of species. He accepted that phantasm and species are similar, and also that the principal cause of an entity is the one most similar to the effect. However, this does not mean that the cause which is (apparently) most similar to the effect, is also the most powerful. Marcello compared the production of the species by phantasm and intellect to the (Aristotelian) view of the generation of man by a man and the sun. It is evident that the agent intellect, like the sun, “*agat principalius & potentius*”. Moreover, intellect and intelligible species are similar in being immaterial. This similarity “*vincit & superat*” the similarity between phantasm and species<sup>251</sup>. Nonetheless, the role of sensory images in the formation of knowledge, though equivocal and not active, was not completely denied

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<sup>247</sup> *De anima opus*, 239r.

<sup>248</sup> *De anima opus*, 239r: “Phantasma enim potentia intelligibile est quoniam singulare sit & materialibus involucris implicitum. Quum vero agentis intellectus beneficio universale efficitur, prius universalis naturam obtineat quam moveat opus est.”

<sup>249</sup> *De anima opus*, 239r: “Quod deinde res in phantasia consistens partialis intelligentiae cum agente intellectu sit causa ferunt est iure ipso ridiculum.” Duns Scotus and many authors after him argued for a partial causality of phantasms in the generation of the intelligible species; cf. vol. I, ch. IV, § 1.1.

<sup>250</sup> In this chapter Marcello was vague about the distinction between species and act.

<sup>251</sup> *De anima opus*, 239v-240r.

by Marcello, as the sensory representations offer the intellect the occasion to exercise its function, namely to bestow universality upon the contents of sensible acts. Only by virtue of the mind's intervention, do these contents become objects of knowledge at a higher level<sup>252</sup>.

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Generally speaking, the debate on intelligible species at the Paduan studio in the 1490's was marked by the following features. First, no author was wholeheartedly convinced that distinct formal principles are needed to mediate between intellectual cognition and sensible reality. In authors such as Vernia and Marcello, the rejection of the species, or their acceptance as either intellective act or cognitive object, was motivated mainly by the desire to maintain the autonomy of the intellectual soul in its acquisition of knowledge. Achillini and Bacilieri, by contrast, seem to have been motivated rather by the desire to preserve genuine Peripatetic cognitive psychology, which was in effect an attempt to reconstruct a stronger version of the direct realism espoused by the late thirteenth-century followers of Averroes at the Parisian Faculty of Arts. It is therefore not surprising that Jandun, in spite of the fact that he was generally esteemed as interpretator of Aristotle and Averroes, was not followed in his attempt to develop an Averroistic conception of mediating mental representations.

### § 3. AGOSTINO NIFO

In scope and erudition, the doctrinal setting of Agostino Nifo's<sup>253</sup> psychology and epistemology widely surpassed that of his master

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<sup>252</sup> See also *De anima opus*, 236v.

<sup>253</sup> Agostino Nifo, 1469/70 Sessa Aurunca—1538 Sessa Aurunca. Italian philosopher and physician, active at many different universities; studied philosophy under Vernia at the University of Padua; ca. 1492 doctor artium at Padua; extraordinary and ordinary professor of philosophy between 1492-1499 in Padua, as competitor and successor of Pomponazzi; appears to have been professor of philosophy and medicine, Naples and Salerno (ca. 1500-1513), Rome (from 1514), Pisa (1519-1522), Salerno and Naples (1522-32); by 1503 he had learned Greek.

Vernia<sup>254</sup>. It drew on a vast number of different sources, discussing a broad range of theories and quoting countless writers. On the other hand, Nifo's work was also marked by the negative aspects of the humanist approach in philosophy. Time and again, his vast erudition stood in the way of a clear and lucid argumentation. The uninhibited display of learning often made it difficult for him, as it now makes it difficult for us, to determine his own philosophical position<sup>255</sup>.

Like Vernia, Nifo dissociated himself from the Averroist interpretation of Peripatetic psychology after the Barozzi enactment of 1489, in particular with regard to the position of the individual soul and its immortality. The dissociation did not take place immediately, however, but developed gradually during the 1490's. In these years, Nifo wrote a commentary on *Destructio destructionis* (begun in 1494, completed in 1497), the first version of his *De anima* commentary (completed in 1498, published in 1503), and *De intellectu*. In the first two works, Nifo still endorsed Averroes' interpretation of Aristotelian psychology. *De intellectu*, by contrast, which had been completed in 1492, was severely revised in an anti-Averroistic sense for the 1503 edition. The first version of the commentary on *De anima* was not revised until 1520 (published in Venice, 1522). Apparently, then, Nifo changed his mind on the Averroist interpretation of the soul's immortality in the late 1490's, probably between 1498 and 1503<sup>256</sup>. The dismissal

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Nifo wrote extensively on virtually all Aristotelian works and also made several new translations; his work has been studied intensively by Mahoney; see *infra*.

<sup>254</sup> A sample may be found in *De intellectu*, Venetiis 1554, *Liber I*, 4va-15, where Nifo referred to, among others, Alexander, Plato, Plotinus, Socrates, Hermes Trismegistus, Macrobius, Avicenna, Albert, Cleanthes, Zeno, Cicero, Ptolemy, Sallustius, Epicurus, Averroes, Themistius, Gregory of Nyssa, Augustine, Gregory the Great, John Damascenus, Thomas Aquinas, Alphonsus Vargas of Toledo, Origen, Porphyry, Avempace, Abubacer, Parmenides, Melissus, Xenophanes, Theodorus, and Numenius.

<sup>255</sup> See also Garin, *Storia della filosofia italiana*, Torino 1978 (first edition 1966), vol. II, 536; Kessler, "The intellective soul", 496-97.

<sup>256</sup> For the chronology of his psychological works, see E.P. Mahoney, "Nicoletto Vernia and Agostino Nifo on Alexander of Aphrodisias", 268; idem, "Agostino's early views on immortality", in *Journal of the History of Philosophy* 8(1970), 451-460, on pp. 452-455; "A note on Agostino Nifo", in *Philosophical Quarterly* 50(1971), 125-132, p. 127; Ch. Lohr, *Latin Aristotle Commentaries*, vol. II: *Renaissance Authors*, p. 282f. The early *De anima* commentary was written during the time when Nifo composed *De intellectu*; it was not (immediately) re-

of Averroes as authoritative commentator had far-reaching consequences for other psychological and epistemological issues as well—a fact that was noted by Nifo himself<sup>257</sup>. Still, Averroes remained an important point of reference in Nifo's psychology: many of the Commentator's followers were attacked with arguments derived from Averroes' own writings<sup>258</sup>.

The number of pages devoted by Nifo to the refutation of the views of others is often many times larger than that used for explaining his own position. One is often under the impression that Nifo claimed certain positions as his own without wholeheartedly supporting them. All in all, the reader is easily confused about his personal views. An typical example is Nifo's discussion of the intelligible species in *De intellectu*, book V. The first forty chapters of this book have the single purpose of completely destroying the doctrine of species. Then, suddenly in chapter 41, contained in a scant pair of columns, the reader is surprised to find stated as "veritas" the need for intelligible species<sup>259</sup>. The vast number of arguments against the species, derived mainly from Averroes, is in stark contrast with Nifo's bald justification of his adopting the doctrine of intelligible species: he simply declared that Averroes' interpretation of Aristotelian psychology cannot be upheld. In

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vised as thoroughly as the latter, however. At the turn of the century, Nifo did not want to publish it any more because he changed his mind on many questions, in particular on the individual immortality; see the dedicatory preface to the second edition of his *De anima* commentary (finished in Pisa, 1520, printed for the first time in Venice 1522). Nardi questions Nifo's veracity concerning the chronology of his writings, suggesting that Nifo tried to gloss over his earlier Averroism and to disguise the actual date he renounced it; see *Saggi*, 286, note 13. In particular, Nardi does not believe Nifo's claim that *De intellectu* was already finished in 1492. Mahoney, however, shows in his "Agostino Nifo's early views" that Nifo's radical change on the issue of personal immortality occurred after he had learned Greek and could read Aristotle in his own language. He argues that for this reason Nifo's protestation, that he did not want the *De anima* commentary to be published, should be believed. Nifo simply did not want a work to be published that did not give his actual position. However, Nardi's intention was principally to underscore Nifo's attempt to ante-date *De intellectu*; this was for him the main reason not to believe Nifo's later remarks (in the preface of the 1522(!) edition of the *De anima*), that in 1503 he did not want the early *De anima* to be published. For present purposes, it is sufficient to date Nifo's 'conversion' between 1497 and 1503.

<sup>257</sup> *De intellectu*, V, c. 41; see also 24rb, 17vb, 30r-v, and 37ra.

<sup>258</sup> Especially Jandun; see *infra*.

<sup>259</sup> In the commentary on *De anima*, the discussion was more balanced.

other words, this means that he accepted the species only for reasons of philosophical conformism.

As is clear from the above considerations, it is problematic to assume that Nifo rejected all of the Commentator's tenets, even if he expressly said so. Equally problematic is the claim that Nifo substituted Averroes with Greek commentators and Scholastic authorities<sup>260</sup>, without specific regard to the issues involved. In point of fact, Nifo displayed a vivid interest in the works of Albert, Thomas, and Giles of Rome<sup>261</sup>. His preference for Albert<sup>262</sup> would seem to suggest that it was by no means Nifo's to reject Averroistic psychology as a whole. This is certainly true of his view of the intimate connection between intellect and cognitive object in the mental act, as is evident from his rejection of the species as "tertium quid"<sup>263</sup>.

### 3.1. *The comment on Destructio destructionis*

The refutation of intelligible species in the commentary on *Destructio destructionis* was directed mainly against the cognitive psychology of John of Jandun, of whom Nifo, as he himself admitted, had earlier been an ardent follower<sup>264</sup>.

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<sup>260</sup> This is the opinion of Mahoney, "Albert the Great and the Studio Patavino", 551, and of Kessler, "The intellectual soul", 498. See also Mahoney, "The Greek commentators", 171-173; idem, "Thomas and the School of Padua", 279-280. For discussion of Nifo's opinion on Alexander, see Mahoney, "Nicoletto Vernia and Agostino Nifo on Alexander of Aphrodisias".

<sup>261</sup> For instance, Thomas was cited in: *De intellectu*, 8va; *In De anima*, Venetiis 1553, 168rb. Giles of Rome occurred, inter alia, in *In De anima*, 162vb, 168rb. See also E.P. Mahoney, "Agostino Nifo's *De sensu agente*", in *Archiv für Geschichte der Philosophie* 53(1971), 119-142, on p. 134.

<sup>262</sup> For Albert's presence in Nifo, see Mahoney, "Albert the Great and the Studio Patavino", 551-552.

<sup>263</sup> His thought showed a clear affinity with Achillini's and Bacilieri's on this aspect of the species issue.

<sup>264</sup> *In librum destructio destructionum Averrois commentarium*, Venetiis 1497, 52ra. Nifo's rejection of the species in his commentary on the *Destructio* has also been discussed by Mahoney, "Antonio Trombetta and Agostino Nifo on Averroes on intelligible species: a philosophical dispute at the University of Padua". In this context, we may also call attention to the dispute between Jandun and Nifo on the modalities of human cognition of separate substances. Nifo contemplated an immediate, non-conceptual cognition for the separate substances; he borrowed this doctrine from Ockham, Henry of Ghent, and John Baconthorpe, and projected it on Averroes. For discussion, see E.P. Mahoney, "John of Jandun and Agostino

According to Nifo, intelligible species that are caused by the phantasms, as conceived by Jandun, are redundant. Somewhat surprisingly, at first sight, Nifo referred not only to Averroes<sup>265</sup> for this thesis, but also to his own *De intellectu*<sup>266</sup>. As we have seen, however, *De intellectu*, the first version of which was completed in 1492, was strongly revised for the 1503 edition<sup>267</sup>. The fact that Nifo's commentary on *Destructio* still quoted *De intellectu* for a rejection of the intelligible species, corroborates the theory that after 1497 *De intellectu* was 'corrected' on the topic of intelligible species, and, more to the point, that ch. 41 of Book V (where the species doctrine is accepted) must be seen as a pious addition of later date. I shall now examine the text of Nifo's *Destructio* commentary in some more detail.

Referring back again to *De intellectu*, Nifo stated that the forms or "quidditates" to be known are not received "subiective" by the mind<sup>268</sup>. He thus took up a medieval dispute, present in the works of Albert, the early Ockham and others, concerning the presence of the species and the cognitive objects in the soul<sup>269</sup>. According to Nifo, knowledge does not consist in any 'subjective' or physicalistically conceived reception, but solely in producing things in an "intelligible being"<sup>270</sup>. This generative perspective allowed him to view the intellect and the intelligible as formally one in the cognitive act, eliminating the need for a "qualitas" or "similitudo rei" between them, as had been theorized by Jandun<sup>271</sup>.

The opposition of the Scotist theologian Antonio Trombetta against Nifo's rejection of the species has already been examined

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Nifo on human felicity (*status*)", in *L'homme et son univers au Moyen Age*, ed. Ch. Wenin, Louvain-la-Neuve 1986, 465-477.

<sup>265</sup> As we have seen in ch. I, § 3.3, Averroes did not presume the necessity of formal mediation at the level of intellectual cognition.

<sup>266</sup> *In destructio*, 47vb.

<sup>267</sup> On this revision, cf. Nardi, *Saggi*, 102; see also p. 159, where Nardi repeats that Nifo lied when he affirmed that *De intellectu* was already written in 1492, considering the fact that he concealed the revision.

<sup>268</sup> *In destructio*, 47vb; see also 86ra.

<sup>269</sup> See ch. II, § 2.1, and IV, § 1.5.

<sup>270</sup> *In destructio*, 48ra. For the background of this expression and similar terminology, see vol. I, ch. IV, § 1.5; cf. also below subsection 3.

<sup>271</sup> *In destructio*, 86rb; see also Mahoney, "Antonio Trombetta and Agostino Nifo", p. 292.



by Mahoney<sup>272</sup>. In his treatise on the possible intellect, Trombetta tried to show that both Aristotle and Averroes, though not developing the notion of intelligible species explicitly, at least tacitly presumed the need for mediating principles in their cognitive psychology<sup>273</sup>. Trombetta's writings attest to the fact that the Scotist views on the intelligible species had at that time gained definite foothold with Franciscan authors<sup>274</sup>.

### 3.2. *The critique of the intelligible species in De intellectu*

Nifo's analysis of the intelligible species takes up almost the entire fifth book of *De intellectu*<sup>275</sup>. As in the commentary on *Destructio destructionis*, one of the main targets of Nifo's violent criticism here was Jandun's interpretation of the psychology of Aristotle and Averroes<sup>276</sup>. In the fifth chapter of the book, Nifo also quarrelled, in a mildly ironical way, with certain "opinantes" who

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<sup>272</sup> See Mahoney, "Antonio Trombetta and Agostino Nifo", in particular p. 295f; cf. also F. Lucchetta, "Recenti studi sull'averroismo padovano", in *L'averroismo in Italia*, Roma 1979, 91-120, on p. 114-15. For discussion of Trombetta, see: A. Poppi, "Lo scotista patavino Antonio Trombetta (1436-1517)", in *Il Santo* 2(1962), 349-367; idem, "Averroismo nella filosofia francescana", in *L'averroismo in Italia*, Roma 1979, 175-220, on p. 214: Trombetta polemized against John of Ripa because this author rejected the intelligible species; cf. ch. III, § 3.6.

<sup>273</sup> See, for instance, *Tractatus singularis contra Averroistas de humanarum animarum plurificatione*, Venetiis 1498, 5ra-vb, where Trombetta assigned to Averroes a detailed doctrine of intelligible species. Trombetta believed that Averroes intended "species universales" when speaking of "intellecta universales". See also Mahoney, "Antonio Trombetta and Agostino Nifo", 299-300. Already Jandun, *Super libros de anima*, 300, argued that Averroes, though not using the term intelligible species, presupposed its systematic necessity. Notice that Averroes was not only attacked by Trombetta, but that the latter also endorsed many of his doctrines. As a matter of fact, he reproached contemporary Aristotelianism for misunderstanding the Commentator; see *Tractatus singularis contra Averroistas*, 12va. For discussion, see Mahoney, "Antonio Trombetta and Agostino Nifo", 296-8.

<sup>274</sup> See also Jean Le Maitre, *Quaestiones super tota philosophia naturali, cum explanatione textus Aristotelis secundum mentem doctoris subtilis Scoti*, Basel 1490, 176vb.

<sup>275</sup> The isolated observations in *De intellectu*, on pp. 3rb, 16ra, 16va, and 20rb, integrated in a different dispute, report mainly the opinions of other authors. It is remarkable that when discussing the operation of the agent intellect as transferring the imagination's intentions from one order to another, Nifo did not even use the term species; cf. 36rb.

<sup>276</sup> See also E.P. Mahoney, Jandun of Jandun and Agostino Nifo on human felicity (*status*), on p. 470.

endorsed the necessity of species<sup>277</sup>. From the way their opinions were reported by Nifo, we may gather that he referred to a fairly generic and wide-spread conception of the intelligible species<sup>278</sup>.

Nifo first explained that the basis for this position lies in the intellect's alleged need for a "quo" to pass into actuality. He then put this theory to the test by confronting it with the "verba Averrois et Aristotelis". As possible arguments in favour of the theory he cited the well-known passages of *De anima* where the soul is characterized as "locus" and "species specierum"<sup>279</sup>. In addition, he pointed to certain texts in Averroes in support of the intellect's receptivity<sup>280</sup>. In the eighth chapter, Nifo proceeded to show that this view is in contradiction with Averroes' teachings. He submitted the following arguments.

The species, conceived as intelligible, must be either actual or potential. Therefore it is either identical with the cognitive object, or it is redundant. Analogously, it can neither be conceived as an eternal entity nor as a newly produced one. In the first case the species would be an intelligence<sup>281</sup>, hence a necessary being, which contradicts its accidental character. In the second case the species would be "nova", which is impossible because neither the phantasm, nor the intellect, nor these together, are able to produce it<sup>282</sup>. Finally, no form of nativism with regard to the species can be accepted as an alternative<sup>283</sup>.

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<sup>277</sup> *De intellectu*, 42va: "Sunt autem quidam ex latinis opinantes secundum fundamenta Aristotelis & Averrois esse, quod intellectus speculativus sunt species intelligibiles causatae a phantasmatibus in intellectu potentiae inhaerentes intellectui, quibus intellectus diversa universalia intelligit quae quidem species secundum rem sunt singulares, sunt vero universales in significando (...)" Thomas, *In II Sent.*, dist. 17, q. 2, a. 1, ad 3um (quoted in ch. II, § 3.5) characterized the species as singular "in essendo" and as universal "in repraesentando".

<sup>278</sup> *De intellectu*, 42vab. According to the authors who argued for the species (whose names are not mentioned; still, Nifo was clearly referring to the medieval debate), the intelligible species is a singular entity, though abstracted from matter. Some maintained that it is produced by the intellect and the phantasm, others indicated the phantasm as its exclusive cause.

<sup>279</sup> *De intellectu*, 43ra; the possible support of these passages for the species doctrine will later be rejected on philological grounds, namely, by confronting them with Argyropoulos' translation; see 52rb. See also *In De anima*, 205rb.

<sup>280</sup> *De intellectu*, 43ra: Averroes, *In de anima*, III, co. 4 and 18.

<sup>281</sup> This argument has a clearly Alexandristic background.

<sup>282</sup> *De intellectu*, 43rb: (1) the phantasm is not able to produce a separate effect; (2) the intellect, being eternal, cannot generate something new; (3) an eternal agent

Apparently unsatisfied with these arguments, Nifo proceeded to demonstrate, in a sort of thought-experiment, that the doctrine of intelligible species leads to intractable contradictions whenever one tries to determine how the same object can be effectively known by different persons<sup>284</sup>. Analyzing this far from hypothetical situation, Nifo argued that no acceptable numerical ratio can be established between the mediating species and the intellection (or intellections), because the intellection of one and the same thing by three different persons inevitably leads to contradiction, whichever combination of one or three intellections and one or three species is chosen<sup>285</sup>. Let me examine this argument in more detail.

When three individual persons know an object, for example a piece of gold, do they know it with one or with three species, and is their effective knowledge of this same object to be seen as one or as three intellections?

*First hypothesis: one intellection.* It must be excluded that the object is grasped in a single act. Three persons are co-involved; if the intellection came to a halt in one of them, then it would also stop in the other two. Moreover, each of the three persons is able to make a different personal judgment. Different judgments cannot be based on one and the same intellection; *ergo*, there must be three cognitive acts.

*Second hypothesis: three intellections and one species.* Three intellections cannot use one species only, because then the distinction between the different acts would lose its ground. The distinction between the three acts cannot be determined by the object

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cannot use a transitory instrument. See also pp. 47va and 49vb, for the argument that the intellect cannot receive something new. For similar arguments against the doctrine of species, see the positions of Olivi (ch. III, § 3.4) and Durandus (ch. IV, § 2.1).

<sup>283</sup> *De intellectu*, 43rb-va: the intellect would know everything without applying itself to sensible reality.

<sup>284</sup> The doctrinal background of this problem is John of Jandun, *Super De anima*, III, q. 10, 279-85, and Taddeus of Parma, *Quaestiones in tertium de anima*, q. VI, 64. Cf. also Z. Kuksewicz, "Un texte intermédiaire entre Taddeo de Parme et Jean de Jandun?", in *Mediaevalia Philosophica Polonorum* 27(1984), 25-63; Nicoletto Vernia, *Quaestiones de pluritate intellectus*, 86va and 88rb; and Pomponazzi, *Quaestio de speciebus intelligibilibus*, 203-204; the latter passage was clearly inspired by Nifo.

<sup>285</sup> *De intellectu*, 43va-b.

or by the intellect itself, as Nifo presumed these latter to be unique. Therefore, the distinction must depend on the phantasms. In that case, however, there should also be three species, because these are the direct product of the phantasms, whereas the intellection is produced by the agent intellect. Moreover, it is impossible that the agent intellect engenders three intellections with only one instrument (namely, the species).

*Third hypothesis: three species and one intellection.* It is impossible that the three people know the object in a single act caused by three species, because in that case the co-operation of the species to produce the act should have a necessary ground. In other words, one would be obliged to demonstrate that one act always requires three formal principles for its effective generation, which is moonshine ("fabula").

*Fourth hypothesis: three species and three intellections.* If it is assumed, with Jandun, that three species are needed for three intellections, then the distinction between the species needs to be justified. Are they different by virtue of an intrinsic feature, or by virtue of an external factor? If the former, then the distinction is *ipso facto* grounded in a specific difference, which would imply that the species are three specifically different entities. However, this makes it impossible for them to represent the same object. If the other horn of the dilemma is chosen, a second dilemma ensues. The external factor can be either the object or the phantasm. Since the object is one, it must be the different phantasms that ground the distinction between the species, or, more precisely, it must be the "habitudines ad phantasmata diversa", as Jandun had claimed, because no intrinsic distinction between the species is allowed. However, the relations ("habitudines") between the intelligible species and the phantasms of an identical object cannot account for the diversity between the species. These "habitudines" or relations are not "in" the species, for then they would be individuals, and they would no longer constitute the (content of the) speculative intellect. Nor are they "in" the phantasms, for then the species in the three persons would be "una in re". Moreover, so Nifo observed, the phantasm, being external to the species, cannot determine the latter's diversity. And, finally, the accidents (to which the species are tacitly assimilated) are individuated according to the

subject in which they inhere. Therefore, the species, as allegedly making up the (speculative) intellect, cannot be multiplied with regard to the phantasm(s) which caused them. The following conclusion is now called for:

Ex his colligere licet quod species illae non possunt poni numeratae, nec una, & per consequens nullo modo poni accidentia rationalis animae, ei realiter & secundum rem inhaerentia.<sup>286</sup>

Nifo has so far demonstrated that the possible relation between, on the one hand, the intelligible species and, on the other hand, the phantasms and the speculative intellect, that is, the possible intellect insofar as it is actualized, cannot be explained in a satisfactory way. The generation by phantasms seems to imply that species are perishable accidents. Still, their ontological status remains problematic, since their possible relation to the intellect cannot be described in terms of inherent accident and subject. This means that the relation to the "quidditates", which the species are supposed to represent, is under fire. Moreover, all solutions in terms of intelligible species to the epistemic and logical problem of how three persons may know one object lead to absurdity and contradiction.

Having established in this ingenious way that all forms of mediating species, understood in the framework of Peripatetic cognitive psychology, lead to unsolvable problems, Nifo turned to the "verba" of Averroes that seemed to support the species doctrine. To begin with, he observed that the intelligible species, conceived as a third entity between phantasm and speculative intellect, falls prey to Plato's third-man argument<sup>287</sup>. In addition, Averroes' texts

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<sup>286</sup> *De intellectu*, 43vb.

<sup>287</sup> If the intelligible species and the phantasm have nothing in common, then there is a rupture in the cognitive process. Alternatively, when they have something in common, then there must be a "tertium quid" between them, which is neither sensible nor intelligible. And this is just not possible. See *De intellectu*, 44ra. For the origin of the third-man argument, see Plato, *Parmenides*, 131e-133a; Aristotle, *Peri ideon*, reported by Alexander; for a general discussion, see M.M. Tweedale, *Abelard on Universals*, Amsterdam 1976, 31f; F.R. Pickering, "Plato's 'third man' arguments", in *Mind* 90(1981), 263-269. The same argument was formulated by Ockham in his criticism of the species; see ch. IV, § 3.1. The menace of infinite regress in the cognitive process was formulated already by Sextus Empiricus in his critique of the Stoic apprehensive impression; see ch. I, § 1.4.3. Also Averroes warned against an infinite regress of (intelligible) intentions when

contain a number of arguments against the species. The receptivity of the intellect, developed in his commentary on *De anima* III, te. 3, regards the “forma comprehensa” and not a mediating species. Moreover, the species cannot be identified with the “intentio intellecta”: the Averroist intention is not received “subiective” in the possible intellect; indeed, the Averroist intentions are neither substances nor accidents. Averroes’ intellect apprehends only universal contents; in other words: it cannot grasp accidents<sup>288</sup>. Finally, lacking a plausible explanation of its generation, it is impossible that the intelligible species should be regarded as something ‘new’ in the intellect<sup>289</sup>.

Summarizing the “vera mens Averrois”, Nifo submitted two fundamental claims: (1) that knowledge is “intentionaliter recipere”, and (2) that the speculative intellect is a junction of the possible intellect with the intelligible forms<sup>290</sup>. He then resumed his attack on Jandun, his main opponent<sup>291</sup>. The chapters that follow suggest that Nifo was probably influenced by Ockham, not only in his correction of the interpretation of Averroes given by champions of the species, but also in the alternative to the species doctrine advanced there:

Si denique intellectus accipitur respectu tui vel mei, concursus phantasmatis non est ad generandum speciem intelligibilem in intellectu, ut sentit Ioan. nec actum intelligendi, ut sentiunt alii, sed ad

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they are viewed as mediating principles, and not as known forms; see *In De anima*, 435-36, and ch. I, § 3.3.

<sup>288</sup> *De intellectu*, 44ra; these arguments, too, were based on the medieval opposition against the species doctrine; see, for example, Ockham (ch. IV, § 3.1); they reappeared also in Achillini, cf. *supra*.

<sup>289</sup> *De intellectu*, 44rb: (a) the intelligible species cannot be created “ex nihilo”, nor (b) can it be a “generatum”, because then it would be a physical thing. See also 45va: an Averroist intellect *is* the intelligibles, it does not receive them. See also *In De anima*, 190va-b. The background of these arguments was again Averroes’ interpretation of *Physics*, VII, te. 20; see ch. I, § 3.3, and IV, § 4.2.

<sup>290</sup> *De intellectu*, 46ra: “(...) intentiones enim intellectae non inhaerent intellectui potentiae, & ideo non colligantur ei per accidens, nec per medium aliquod (...)”.

<sup>291</sup> *De intellectu*, 46rb: “ergo secundum Ioannem ideo ex intellectu et homine fit unum in operatione, quoniam phantasma agit intelligibilem speciem, & intellectus recipit illam, quae actio quia una numero est, ideo intellectus & homo fiunt unum quoddam numero, tanta unione unum quia homo intelligit intellectu separato.”

fundandam habitudinem vel aptitudinem, qua nos sumus nunc continui intellectui.<sup>292</sup>

Phantasms do not contribute to the generation of species or cognitive acts, but to the production of mental dispositions<sup>293</sup>. Probably also inspired by Ockham<sup>294</sup>, Nifo repeated that in Averroes' view of the mental act no "tertium" can be admitted<sup>295</sup>. The alternative theory of intellectual habits returned in his critique of Jandun's view (called "frivolus" by Nifo) that the intelligible species are generated by the "cogitativa". In contrast, Nifo submitted, on genuinely Averroistic principles the only basis of the intellect's relation to mankind is the speculating and composing "cogitativa"<sup>296</sup>. Central in his refutation of the intelligible species as "tertium" was Nifo's assumption that mental acts should not be conceived as composed, because then the intelligibles would become unattainable<sup>297</sup>. In addition, Nifo claimed that the entire doctrine of species would be revealed as superfluous once the Aristotelian texts were correctly translated<sup>298</sup>.

After forty chapters of dialectical violence against the notion of intelligible species, Nifo's declaration of a totally opposite

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<sup>292</sup> *De intellectu*, 46vb-47ra; for the doctrine of habit in Ockham, see ch. IV, § 3.1.

<sup>293</sup> See Ockham's view of the "aptitudo", resulting after repeated acts concerning the same or similar objects, examined in ch. IV, § 3.1.

<sup>294</sup> See ch. IV, § 3.1, and also Apollinare Offredi, *Quaestiones*, 85ra-87va, discussed in ch. V, § 3.3.

<sup>295</sup> *De intellectu*, 47va: "(...) & sic intellectus & intelligibile uniuntur non ratione tertii, sed ratione unius formae, quae eadem numero est utriusque (...) Ex his sequitur quid sit facere de potentia intelligibilibus actu intelligibilia; non est enim noviter intellecta abstrahere sed iam antiqua abstracta noviter intrare, ac illis abstractis diu continuari."

<sup>296</sup> *De intellectu*, 50vb: "Ideo aliter oportet dicere, quod ut diximus alias, fundamentum proximum habitudinis & aptitudinis & actualis relationis, qua intellectus continuatur nobis ut principium intelligendi, est cogitativa actu speculans vel componens"; cf. 47ra.

<sup>297</sup> *De intellectu*, 52ra.

<sup>298</sup> *De intellectu*, 52rb: "(...) & primo debes scire quod species apud peripateticos non est specificatum ac similitudo rei & qualitas illius, sed est forma intellecta seu concepta perficiens intellectum intentionaliter, & ideo ubi Aristoteles in translatione nostra habet speciem Averroes in translatione eius habet formam, erit ergo sensus quod intellectus est impassibilis corruptiva receptione tamen est susceptivus formae intentionaliter & universaliter & non inhaerenter tanquam sibi accidens, ut male exponunt latini". See also Ockham's rejection, on philological grounds, of Thomas' and Duns Scotus' conceptions of species.

“veritas” in chapter 41 strikes the reader as an incongruity. On Averroist principles, so Nifo submitted, the intelligible species must be seen as fictions<sup>299</sup>. However, if the intellect is regarded as “virtus animae”, the situation is very different:

quia nos concedimus totum oppositum principiorum, ideo ut expositores dicunt concedimus totum oppositum conclusionum, conclusiones nonne sequuntur ex principiis, & ideo dicimus aliud esse intellectum, et aliud quo intellectum intelligitur.<sup>300</sup>

Once the Averroist principles are abandoned, all previous conclusions cease to be valid, and one is forced to accept their exact opposite. This point underlines again the difference between Nifo and Jandun: according to Nifo, Jandun was correct in defending the species, but he based his conclusions on an incorrect reading of Averroes. For Nifo this was new reason to take issue with his old master, not only with regard to the generation of species, but also with regard to their alleged priority relative to the cognitive act<sup>301</sup>. According to Nifo, the species cannot be a quality preceding the intellectual act, for then (1) the intellect would be in act before knowing, and (2) the mental act would be a “passio”<sup>302</sup>. Concluding that the need for species cannot be demonstrated, Nifo, like Achillini, opted for the identification of intelligible species and mental act:

Facilius ergo dicendum puto intellectionem esse speciem secundum rem, sed differre solum in modo & ratione, potest enim effectus comparari ad intellectum potentiae, & ad formam intellectus abstractam a materia quae vocatur obiectum intelligibile, si enim intellectui comparetur sic passionis et intellectionis nomen sibi vendicat. Si autem obiectum respiciat intelligibile, cuius est similitudo, sic ra-

<sup>299</sup> *De intellectu*, 52va.

<sup>300</sup> *De intellectu*, 52vb. However, see also Achillini, *De intelligentiis*, 13vb: “Sed quia in hoc quaesito Commentator ad suum falsum fundamentum de unitate intellectus consequenter loquitur: posito enim intellectu uno non multiplicato: ponit accidentia non inhaerere illi. Nos autem oppositum illius fundamenti tenemus. ideo non oportet nos concordare in conclusione sequente ex illo.” Marcantonio Genua was to underline the peculiarity of Nifo’s strategy in the interpretation of ‘Averroes on species’; cf. *In tres libros Aristotelis de Anima exactissimi Commentarii*, Venetijs 1576, 145va.

<sup>301</sup> *De intellectu*, 52vb-53ra. See also p. 53rb, concerning the phantasm’s role in the generation of mental acts, which, in contrast to Jandun, was characterized here as subordinate.

<sup>302</sup> This view was endorsed by some of Jandun’s Italian followers; cf. ch. IV, § 4.4 and 6.



tionem speciei retinet, erit ergo una res absolute, licet modi intelligendi illam sint diversi.<sup>303</sup>

The distinction between species and intellection (the traditional first and second act) can be maintained only if it is not regarded as 'real'<sup>304</sup>. Here Nifo joined ranks with Achillini and Bacilieri in a position that had been well-known in the Middle Ages, as we have seen<sup>305</sup>.

Summarizing, we may say that book V of the *De intellectu* is marked by a thoroughly unbalanced composition. A lengthy forty chapters are spent on explaining the opinions of authors who defended the necessity of species, and on an extremely detailed, if not always equally lucid, refutation of their arguments. The bulk of the book is in fact a *pars destruens*, laying bare in meticulous detail the contradictions between the foundations of the species doctrine and those of Aristotelian philosophy. For the determination of Aristotle's central tenets, Averroes' interpretation continued to play a role of significance. According to Nifo, this implied quasi automatically that Jandun's interpretation of Aristotle and Averroes should be rejected. In the final analysis, however, Nifo's own solution to the problem of formal mediation in intellectual cognition was advanced in a disappointing and confusing way: Nifo's dialectical and speculative talents tended to be largely destructive.

### 3.3. *Species and notion in the commentary to De anima*

More balanced than those in *De intellectu* were Nifo's speculations on the intelligible species in his *De anima*-commentary. This work was composed during his writing of *De intellectu*<sup>306</sup>. As appears

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<sup>303</sup> *De intellectu*, 53ra.

<sup>304</sup> *De intellectu*, 53rb: "Intellectio ergo & species intelligendi sunt unum re ac secundum fundamentum, differunt tamen ratione & modo intelligendi, semper enim vitandum est superfluitas quantum est possibile."

<sup>305</sup> See ch. III, § 3.3 and 5, and ch. IV, § 2.2.

<sup>306</sup> See *supra*; the first version of the *De anima* commentary was written in 1498, published in 1503. Reprints followed in 1520, 1522, 1523, 1544, 1552, 1553, 1554, and 1559. In *De intellectu*, 53va, Nifo already referred to his *De anima* commentary. But, as explained above, Nifo did not want to print this first version of the commentary, because it no longer represented his current position in psychology.

from the numerous additions, however, Nifo thoroughly revised the printed editions<sup>307</sup>.

In the *De anima*-commentary Nifo's main interlocutor (that is, the target of his attacks) was again Jandun<sup>308</sup>. Again, the issue of species was discussed in the context of Averroes' co. 3 of *De anima* III, regarding the formation of the speculative intellect. Nifo emphasized the fact that this passage had mostly been misunderstood by younger researchers, his former self included<sup>309</sup>. The species, at this stage of the discussion explicitly qualified as the Latin translation of the Greek *eidos*, is described as "ratio intelligendi, non intellecta"<sup>310</sup>. Indeed, a "ratio intelligendi" can be viewed as either "intellecta", that is, as definition, or as "non intellecta":

(...) quam per ipsam intelligere possumus, & ipsam non prius intelligere: & sic similitudo in mente, dicitur species & ratio intelligendi, quia postquam intellectus per ipsam efficitur in actu intelligit intelligibile cuius est species: non tamen illam prius intelligendo, sed postea reflexere, ut alibi dicemus.<sup>311</sup>

As a matter of fact, in this work Nifo accepted the species as "quo" with considerably less reservations than in *De intellectu*, although he avoided considering the species as preceding the cognitive act<sup>312</sup>. Surprisingly, Nifo did not only combat the view that the species are "subiective" in the soul, as Jandun had claimed, but also stated that the cognitive objects are "intentionaliter" in the mind, and, even more important, that they are present "obiective" in the latter. This conclusion implicitly links his thought with that of Albert and a generation of authors active around the turn of the

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<sup>307</sup> I consulted the following edition: *Expositio subtilissima collectanea commentariaque in III libros Aristotelis De anima*, Venetiis 1553. For a sample of an addition to the 1503 edition, cf. 203vb.

<sup>308</sup> See, for example, *In De anima*, 142ra-vb, 152ra (regarding Jandun's notion of intelligible species), 157rb, 165vb, and 171rb.

<sup>309</sup> *In De anima*, 143ra-b.

<sup>310</sup> *In De anima*, 143vb.

<sup>311</sup> *In De anima*, 143vb.

<sup>312</sup> For the species' mediating role in the knowledge of universals, see 144vb. A similar position is found in Duns Scotus; see ch. IV, § 1.1. Nifo even referred to his *In destructio*, on p. 144vb.

thirteenth and fourteenth century, including the early Ockham<sup>313</sup>. Cognitive objects are received as intentions. Accordingly, the intelligible species, considered as intellectual accidents, must be rejected<sup>314</sup>.

The “veritas”, which was again formulated in a few lines only, is grounded in the ‘true’ doctrine of the multiplication of the intellect and the necessary relation between the human body and the intellectual soul<sup>315</sup>. The human intellect arises with the body and has no knowledge whatsoever. On the basis of cognitive acts a speculative intellect arises, which is composed of species. The species mediate our grasp of the intelligible forms<sup>316</sup>. Averroes, erroneously defending the uniqueness of the intellectual soul, was simply forced to deny the need for intelligible species<sup>317</sup>. According to Nifo, however, the received species do not represent universals, but only singulars; thus, they play a mediating role in the knowledge of the latter:

At secundum veritatem per singula Aristoteles intelligit universalia, fit autem intellectus singula, quo recipit notiones, quae grece dicuntur noemata quae possunt dici species rerum intelligibilium. Ergo intellectus fit singula non realiter, sed intentionaliter, quatenus recipit singulorum species, mediantibus quibus quodammodo omnia est intentionaliter.<sup>318</sup>

Accepting the intelligible species as primarily representing singular entities, Nifo associated himself with a variegated group of

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<sup>313</sup> *In De anima*, 142vb, 157rb, 162vb, and 206va; see also the medieval discussions (ch. IV, § 1.5), other 16th-century authors (in particular ch. VII), and Descartes’ doctrine of the objective being of the ideas, discussed in ch. XI, § 1.2.

<sup>314</sup> *In De anima*, 190vab: “Et ex his patet quod supervacue sint species intelligibiles, quae sunt accidentia intellectus: ut fingunt latini secundum Aver. mentem, ut diximus in libro de intellectu.”

<sup>315</sup> *In De anima*, 163rb.

<sup>316</sup> In agreement with Thomas, Nifo remarked that also knowledge of the self must be based on species; cf. *In De anima*, 167ra, 173ra-174ra.

<sup>317</sup> *In De anima*, 163rb. See also the critical analysis of Averroes, on p. 175rb-va.

<sup>318</sup> *In De anima*, 166vb; see also p. 181vb, where “noema” was defined as “notio”, “conceptus”, and “notio obiectiva”. For the terminology of “noema” and “notio”, see also the translations of Neoplatonic works by Moerbeke; cf. ch. I, § 4.2. For an identification of the species with notion, see already John of Malinas, analyzed in ch. V, § 2.4.

medieval writers, including Thomas Wilton, Gregory of Rimini, Peter of Ailly, and Paul of Venice<sup>319</sup>.

More details of Nifo's account on intelligible species can be gathered from his analysis of the agent intellect. In this context, Nifo rejected Averroes' notion of the agent intellect and referred to Durandus, who denied both intelligible species and agent intellect<sup>320</sup>. Nifo agreed with this medieval adversary of the species, because Durandus rightly played down the role of the agent intellect as indispensable cognitive faculty. Indeed, the agent intellect causes neither something in the phantasms nor a species or a notion in the possible intellect. The agent intellect is a "virtus agens" only insofar as it is "medium dispositivum quo anima recipit species universaliter repraesentativas", or, more precisely, a "dispositio qua phantasmata agant in ipsum intellectum nostrum"<sup>321</sup>.

Probably careful not to endorse the traditional doctrine of species without reservations, Nifo only rarely used the term "species" in this work, mostly preferring the expressions "intentio"<sup>322</sup> or "notio"<sup>323</sup>. The latter qualification is particularly significant, I think, as it voices Nifo's conviction that the species is not to be seen as "medium" or "tertium quid", but strictly as a mental content. Also his remarks on intellectual abstraction must be

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<sup>319</sup> Cf. *In De anima*, 160vb; for the positions of the medieval authors, see ch. IV, § 4.1 and 4; ch. V, § 1.1 and 3.1.

<sup>320</sup> For Durandus, see ch. IV, § 2.1. See also the position of Olivi (ch. III, § 3.4).

<sup>321</sup> *In De anima*, 176rb; however, in *De intellectu*, 53rb, the species production was still attributed to the agent intellect.

<sup>322</sup> Cf. the interpretation of the famous "non enim lapis in anima", in *In De anima*, 205vb: "(...) est res omnes secundum quid, ac quodammodo, verum cum non constet rerum formis sed formarum intentionibus (nam intellectu constat notionibus, sensu vero intentionibus) ergo anima est omnia quodammodo intentionaliter." See also *In De anima*, 166vb, for the identification of the intelligible species with notion.

<sup>323</sup> *In De anima*, 206rb: "(...) sic intellectus est species omnium specierum susceptiva cum habeat notiones omnium intelligibilium." See 166vb (quoted above) for the affinity between the intelligible species and the notions; see also 207ra: "(...) & notio & species, & intentio intellecta, & (ut meta. loquar) conceptus formalis quo intellectus formaliter intelligit id, cuius est similitudo." The distinction drawn by Nifo in this context between formal concept (species, notion, intention) and objective concept (the final result of cognition) was to be elaborated by Suarez; cf. ch. X, § 1.6. Many scholars regard this distinction as crucial for Descartes' notion of ideas as well; cf. ch. XI, § 1.2.

understood from this perspective. Nifo first discussed and rejected six opinions of “iuniores”, besides that of John of Jandun<sup>324</sup>. Then he described the abstraction as an operation of the possible intellect, regarding the task of the agent intellect as principally “eductio” or “translatio”<sup>325</sup>. In accordance with his approval of Durandus, Nifo denied that the agent intellect is able to do anything in or with the phantasm<sup>326</sup>. The aforementioned role of the agent intellect as “medium dispositivum” can now be specified more precisely:

(...) intellectus ergo agens non agit sed afficit animam, ut recipiat rerum universales intentiones.<sup>327</sup>

Minimalizing the function of the agent intellect, Nifo echoed Durandus and anticipated, in a certain sense, the speculations of certain Spanish schoolmen<sup>328</sup>.

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The development of Nifo’s view on the intelligible species illustrates the vexed condition of many Peripatetics of his generation. These writers felt obliged to address problems that were first raised in medieval discussions of epistemology, and which they

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<sup>324</sup> *In De anima*, 207vb-208ra: (1) enabling the phantasm to move the possible intellect by purifying it; (2) production of the intelligible species from the phantasm; (3) the generation of a more general concept in base of less general ones; (4) production of second intentions; (5) forming composed concepts from simple ones; (6) knowledge of the cause in virtue of cognition of the effects. According to Nifo, Jandun postulated a double abstraction: the actualisation of the intelligibles by the agent intellect, and the possible intellect’s operations regarding previously acquired information.

<sup>325</sup> *In De anima*, 208ra.

<sup>326</sup> *In De anima*, 208rb-va.

<sup>327</sup> *In De anima*, 208va; see also 208vb: “ergo virtus dicitur intellectus agens: per quanto est dispositio, qua phantasmata in intellectum nostrum agant.”

<sup>328</sup> Most noticeably, Suarez; see ch. X, § 1.6. Nifo’s psychology was later referred to by Michael de Palacios, *In tres libros Aristotelis de anima commentarij*, Salamanticae 1557, 258va and 260vb; Suarez, *Liber de anima*, 625b, 627a, 744b; Collegium Conimbricense, *Commentarii in tres libros De anima Aristotelis Stagiritae*, Venetiis 1616, 337a; Antonius Ruvius, *Commentarii in libros Aristotelis Stagiritae (...), de Anima (...)*, Lugduni 1613, 674; Johannes de Sancto Thoma, *Cursus philosophicus Thomisticus*, Taurini 1930-37 (first edition 1635), 299a; Ioannes Poncius, *Integer Philosophiae cursus ad mentem Scoti*, Pars III, Romae 1643, 488b; Sebastian Izquierdo, *Pharus scientiarum*, Lugduni 1659, 2b.

considered to be extraneous to the genuine Aristotelianism they wanted to work out. His esteem for Averroes initially induced Nifo to reject the doctrine of formal mediating principles in intellectual knowledge. Later, however, he reconsidered his position. As the main reason for this turn of mind Nifo mentioned his learning Greek at the end of the 1490's. However, the fact that he tried to gloss over his earlier Averroism and to disguise the actual date he renounced it, strongly suggest that the Barozzi enactment of 1489 was equally important, if not more, for his change of thought. In fact, learning the Greek originals can hardly be said to be contributive to accepting a theory like that of the species. On the contrary, the lecture of Aristotle and his Hellenistic commentators in the original language may sooner be expected to provide strong philological arguments against mediating species. It would seem more likely, then, that Nifo's reluctant acceptance of the doctrine was due rather to a revival of a more traditionally oriented interpretation of Aristotle, which in Padua was based mainly on Thomistic and Scotistic views. On the other hand, we have seen that Nifo did not endorse the notion of species as conceived by Thomas or Duns Scotus. The fact that he mentioned Durandus as authority with regard to the agent intellect can hardly be merely incidental. Nifo remained faithful to the form of realism outlined by the first Latin followers of Averroes, and endorsed also by Achillini and Bacilieri. His suggestion to regard the species principally as "notio" may have been inspired by medieval predecessors, or by the works of contemporary authors such as Lefèvre or Bovelles; it certainly influenced later authors such as Buccaferrea, Vimercato and Lando<sup>329</sup>.

#### § 4. CONCLUSION

Important changes in philosophical outlook took place during the second half of the fifteenth century. After the rediscovery of the works of Plato, Plotinus and other Neoplatonic authors, Platonism became an autonomous current in the philosophical landscape. At the same time, the rise of humanistic philology and certain politi-

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<sup>329</sup> See § 1.4 of this chapter, and ch. VII, § 3.2.1-2, respectively.

cal led to a new approach toward Aristotelian philosophy in Northern Italy. With regard to the issue of intelligible species, these developments induced a number of variegated positions, in which it is possible to discern the interacting contributions of traditional schools. Many authors discussed and assimilated doctrinal elements that were really extraneous to their original frame of thought. 'New' Platonics, for example, such as Ficino and Pico, tried to accommodate the notion of intelligible species within the framework of Neoplatonic metaphysics. In Ficino, this meant that the role of the intelligible species collapses onto that of idea or innate "formula". Pico, by contrast, hesitated in his *Conclusiones* between a straightforward rejection of the intelligible species and an innatistic appropriation. His attempt in *Heptaplus* to somehow save the extramental origin of the intelligible species by integrating it in the circular movement of reality (grounded in a metaphysics of light) was to reappear in Giordano Bruno.

Cusanus, Bovelles, and Fracastoro reflected on the problem of concept acquisition in relation to the traditional doctrine of intentional species, without being involved in any of the classic controversies surrounding the species. They made eclectic use of elements from the species theory without endorsing any particular version of it. Their doctrinal independence marked the beginning of a new era in philosophical research. Although they did not subscribe to any school-philosophy in particular, Cusanus and Bovelles were associated with the same revival in Platonism. Fracastoro, the physician, presented a solution for the problem of knowledge acquisition which gave primacy to the physiologically embedded capacities of the human soul.

Among the group of independent thinkers Cusanus merits particular attention because of the systematicity of his thought. He formulated a highly original solution for the synergy between sensible reality, sensory apparatus, and perceptual-mental capacities in the acquisition of knowledge. Like Aristotle, Cusanus defined sense perception as a necessary condition for the generation of knowledge; in contrast to Peripatetic cognitive psychology, however, he based the mechanics of perception on the presence of mind in the spirit itself, which, as a subtle body, constitutes the sense organs. Indeed, the motions and alterations of the sense or-

gans may be said to cause perception insofar as they are conditioned by the mind. This construction makes it possible for Cusanus to attribute sense-perception to the human mind itself. The distinction between soul and body is maintained, yet without implying any rupture. The presence of the mind in the body is not considered as problematic; thus, the possibility of interaction and co-operation between mind and body is warranted from the very start of the perceptual, viz. cognitive processes.

It is clear from the works of Platonic and independent authors that late fifteenth-century psychological discussion was increasingly syncretistic in character. During this period, the humanistic approach to ancient literary and philosophical texts stimulated a less dogmatic exegesis of the works of authoritative authors. The new philology required interpretations to be warranted by the original texts. Moreover, professional philosophers at North-Italian universities came to make more narrow distinctions between the theological and philosophical presuppositions of their psychology. Indeed, philosophical hypotheses were held to be valid only when they are logically consistent with the central tenets of Peripatetic philosophy. This strategy resulted in a revaluation of many doctrines traditionally attributed to philosophers such as Aristotle and Averroes. The success of the new approach did not mean, however, that the species controversy lost contact with earlier Scholastic debates. The controversy over Averroes' psychology also affected the acceptability of the intelligible species. Moreover, traditional medieval authorities were not given up easily. Generally speaking, late fifteenth-century philosophers of the Paduan School give the impression that they did not know what to make of the doctrine of the intelligible species, which they inherited from the medieval Scholastic tradition, but for which they found no sound basis in the texts of Aristotle and Averroes.

The psychological works of Achillini and Bacilieri exemplified the new methodology with regard to interpreting Peripatetic cognitive psychology. They showed that no philological and systematic foundation for the species doctrine can be found in Aristotle and Averroes. Instead of simply rejecting the notion of "species", however, they endorsed the concept in adapted versions, known already from medieval discussions.



Unlike Achillini and Bacilieri, Vernia and Nifo changed their mind with regard to Averroes. Both Vernia and Nifo were deeply influenced by Neoplatonic commentaries on Aristotle. In spite of these points of agreement, their conclusions regarding the species were quite different. Vernia associated his psychological views with those of Neoplatonic authors, and endorsed the species as innate content. Nifo, by contrast, gave a sophisticated rejection of the species based on Aristotle and Averroes; eventually repudiating Averroistic psychology, however, he came to endorse the exact opposite of his earlier conclusions.

Nifo embodied all the doubts and contradictions of his generation. His 'solution' of the species issue may count as characteristic of his time, determined as it was by an extremely rich erudition, an extraordinary talent for polemics, and a doctrinal turn after the 1489 enactment. His refutation of the doctrine of intelligible species was unequaled in scope and dialectical refinement; yet, he ultimately surrendered to the doctrine destroyed by him. Nifo's clamorous conclusion in the 41th chapter of the fifth book of *De intellectu* demonstrates that the ecclesiastical authorities, aware of the menace of a corporation of professional philosophers, successfully manipulated their doctrinal outlook. All in all, however, Nifo's contribution to the dispute on intelligible species was not only negative: his proposal to consider the species as (conceptual) notion rather than as (unknown) representation was an important innovation in the development of Aristotelian cognitive psychology. This solution paved the way for a new approach in the theory of concept acquisition. It was to be accepted not only by full-blooded Peripatetics, such as Buccaferrea and other writers of the late sixteenth-century, but also by authors such as Giordano Bruno.

## CHAPTER SEVEN

### THE SIXTEENTH-CENTURY DISPUTES

Around the turn of the fifteenth and sixteenth centuries, philosophical speculation at North-Italian universities was marked by a fundamental scepticism with regard to the need of intelligible species. Achillini and Bacilieri, who rejected the species as mediating principle of intellective cognition, accepted it nonetheless as the mental presence of the object, assimilating species and cognitive act. Nifo left no stone unturned to suggest that his acceptance of the species as necessary “quo” was not based on philosophical motives in the strict sense, and developed in his commentary on *De anima* the alternative interpretation of “notio”. This was the philosophical milieu from which sprang the first positive accounts of species in the Renaissance, namely, those of Pietro Pomponazzi and Marcantonio Zimara. Their defences of the species, which meant a return to medieval conceptions of the intellectual act, will be analyzed in the first section<sup>1</sup>.

For all its clamour and vividness, the controversy at the Italian universities remained virtually unknown beyond the faculties of arts. This relative obscurity was partially caused by the nature of the dispute on intelligible species in theological circles, which will be the subject of the second section. The participants to that dispute, such as Caietanus, Sylvester of Ferrara and Javelli, adopted positions that were philosophically well argued for, yet remained essentially within the bounds of Scholastic psychology, in particular that of Aquinas, both in terms of the problems discussed and the conceptual framework adopted for the discussion. Scholastic philosophical speculation in the early sixteenth century was

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<sup>1</sup> Pomponazzi's and Zimara's opinions on intelligible species have also been analyzed by A. Poppi, “La discussione sulla «species intelligibilis» nella scuola padovana del Cinquecento”.

strongly influenced by the revival of Thomism that originated from the works of John Capreolus, John Versor and Peter Crockaert<sup>2</sup>. Somewhat later, the doctrinal activity of the authors discussed in this context would significantly promote the adoption of Thomas as central theological authority at Jesuit colleges in Spain, Portugal and Italy<sup>3</sup>.

The passionate Italian disputes contrasted sharply with contemporary discussions of the species in the German Renaissance and Reformation, to which I turn in the third section. There I also discuss authors who raised the question of species only incidentally in their commentaries on *De anima*, and who were probably influenced by Nifo's interpretation of the species as "notio".

The final section is devoted to authors who challenged the ardent defenders of the species doctrine, such as Marcantonio Zimara. Porzio and Girelli, for example, were convinced that open-minded philosophical reflection, and a close reading of Averroes, would definitively settle the issue of intelligible species.

## § 1. THE TURN TO TRADITION IN THE NEW DEFENCE

### 1.1. *Pietro Pomponazzi*

As we have seen in the previous chapter, the dispute on intelligible species at universities in Northern Italy was determined largely by the question of how to understand the receptivity of the possible intellect and the formation of what Averroes had called the "intellectus speculativus". In a discussion with traditional masters, Vernia, Achillini, Bacilieri, and Nifo concluded that a formal mediating principle of knowledge, considered as really distinct from the intellectual act, clashes with central tenets of Peripatetic cognitive psychology, in particular when the latter is understood in the Commentator's terms.

The philosophical and philological perplexities surrounding the exegesis of Aristotle and Averroes on mental representation caused

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<sup>2</sup> See ch. V, § 2.

<sup>3</sup> For discussion, see P.O. Kristeller, *Le Thomisme et la pensée italienne de la Renaissance*, Montréal-Paris 1967; for the Jesuit interpretation of Thomas, see ch. X and XII.

Pomponazzi<sup>4</sup> to devote a series of lectures to this problem. As we know, he did so at the request of his students. Of these lectures Pomponazzi did not prepare or leave an edition ready for print. In 1970, A. Poppi published an edition of the *Quaestio de speciebus intelligibilibus et intellectu speculativo* on the basis of lecture-notes taken by Pomponazzi's students<sup>5</sup>. Pomponazzi apparently felt the need to personally intervene in a dispute that was principally between Averroists and ex-Averroists. The fact that he chose to defend a traditional medieval solution of the problem sheds new light on his relation with Averroes and with the Scholastic tradition. In the literature on the subject many hypotheses have been framed about a possible Alexandristic turn in Pomponazzi's thought. Yet, it is now generally believed that Pomponazzi, when he developed his position on intelligible species, was still convinced that Averroes' interpretation of Peripatetic cognitive psychology was essentially in character with Aristotle's thought<sup>6</sup>. Notice, however, that Pomponazzi accepted the need for species also in his subsequent well-known *Tractatus de immortalitate animae*<sup>7</sup>.

Let me note in passing that much research on the relation between Averroes and leading representatives of Renaissance Aristotelianism has tended to focus on the issue of the individual immortality of human soul. This question surely deserves our closest attention, but its effect has been that other aspects of Averroes' in-

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<sup>4</sup> Pietro Pomponazzi, 1462 Mantua—1525 Bologna; by 1484 studied arts at the University of Padua; taught philosophy in Padua between 1488-1496; after disagreements with Nifo, professor of philosophy at the Court of Prince Alberto Pio, Carpi (1496-99); taught again in Padua (1499-1509), then in Ferrara (1510-11), and in Bologna (till 1525), where he published, *inter alia*, his famous *Tractatus de immortalitate animae* (1516).

<sup>5</sup> Pietro Pomponazzi, *Corsi inediti dell'insegnamento padovano*, vol. II, Padova 1970, 177-210; see Poppi, "La discussione", 142-43, for the criteria underlying the edition of these lecture notes.

<sup>6</sup> On Pomponazzi's development, see B. Nardi, *Studi su Pietro Pomponazzi*, Firenze 1965, pp. 43-45, and 168; A. Poppi, "Ci fu una evoluzione in senso alessandrista nel pensiero del Pomponazzi?", in *Saggi sul pensiero inedito di Pietro Pomponazzi*, 27-92; J. Céard, "Matérialisme et théorie de l'âme dans la pensée padouane: le *Traité de l'immortalité de l'âme* de Pomponazzi", in *Revue philosophique de la France* (1981), 25-48, on pp. 32-33.

<sup>7</sup> See *Tractatus de immortalitate animae*, ed. G. Morra, Bologna 1954, p. 142, regarding the status of the species in the human intellect, halfway between the intelligences and sensible reality: "(...) quoniam species primo universaliter repraesentant, secundo ut in supposito, (...)"; and p. 166: "intelligere per species".

fluence on Renaissance cognitive psychology have been largely neglected or seriously underestimated. As we have seen in the previous chapter with regard to the position of Nifo, the acceptance or rejection of Averroes' psychology did not automatically involve each and all of his views on psychology and epistemology. More to the point, the rejection of his views on individual immortality did not necessarily affect his presumed authority on issues such as that of the intelligible species<sup>8</sup>. When Pomponazzi, in the course of his career, departed from Averroes' interpretation of Peripatetic psychology, this does not mean that he denounced the Commentator's authority on all items concerning the interpretation of Aristotle<sup>9</sup>.

Pomponazzi started his first lecture on intelligible species with an explicit reference to Averroes' commentary on *Physics*, VII, te. 20. More precisely, quoting Burley's analysis of this passage in Averroes, he raised the question whether Burley's conclusion should be accepted, to the effect that Averroes' interpretation of Aristotle's text *ipso facto* ruled out the need for intelligible species. He then remarked that Burley was followed by Achillini and Nifo on this point, giving the following summary of their arguments<sup>10</sup>.

If species existed, they should be either intelligible in act or in potency, either immaterial or material, either eternal or perishable. Each of the horns of these dilemmas entails either impossible positions or leads to unresolvable contradictions. Moreover, the species' possible generation is problematic, since neither the agent intellect, nor the phantasms, nor both together can produce them<sup>11</sup>. Furthermore, two persons cannot know the same thing with the

<sup>8</sup> See the previous chapter, in particular, § 2-3.

<sup>9</sup> See also Poppi, "Ci fu una evoluzione", 54.

<sup>10</sup> *Quaestio de speciebus intelligibilibus*, 177. Eventually, Burley's interpretation of Averroes was not accepted by Pomponazzi; cf. p. 209-210. Poppi, "La discussione", 145, suggests that Pomponazzi borrowed the following arguments from Albert and Burley. It is not inconceivable, however, that he derived them directly from Achillini and Nifo; cf. ch. VI, § 2.1 and § 3.

<sup>11</sup> See Achillini, *Quolibeta de intelligentiis*, 13va, and medieval oppositions such as those by Olivi and Durandus.

same species, nor can they know it with two different species<sup>12</sup>. Even if one grants the existence of species, these would necessarily lead to an infinite regress: from the two species with which two persons know the same object there could be abstracted another species, and so on<sup>13</sup>. Finally, the notion of intelligible species is not in harmony with the thought of Averroes<sup>14</sup>.

In the subsequent lecture Pomponazzi rejected this opinion. His argument makes appeal to Thomas, Albert, Giles of Rome, and Duns Scotus<sup>15</sup>. At first sight, Pomponazzi's defence of the species strikes one as neither original nor particularly well-argued. His argumentation is based on two central claims. First, that our intellectual knowledge derives from the sensible world<sup>16</sup>. And secondly, that an immediate transition from the concrete material reality to the level of intellectual abstraction is out of question. Against his adversaries he argued that a direct information by the external forms leads to contradictions<sup>17</sup>. By not accepting the species, they are unable to explain the origin of universal knowledge. On condition that a direct and vertical information of the possible intellect is ruled out, so Pomponazzi argued, the notion of sense-dependent intelligible species offers the only reasonable ex-

<sup>12</sup> See Nifo, *De intellectu*, 43vab, and the background in Jandun, *Super libros de anima*, III, q. 10.

<sup>13</sup> *Quaestio*, 178-182; obviously, Pomponazzi could have derived practically all these arguments from Nifo's *De intellectu*; see ch. VI, § 3.2.

<sup>14</sup> *Quaestio*, 182-83: (a) the separate substances do not receive accidents; (b) the intelligible and the intellect would not form a real unity; (c) the intellect does not receive the "res materiales" as "subiectum"; see, once more, Nifo's arguments in *De intellectu*.

<sup>15</sup> For the position of Thomas in Pomponazzi, cf. Mahoney, "Saint Thomas and the School of Padua", 281-83. See also A. Poppi, "Ci fu una evoluzione", 44: insofar as "opinio theologorum", the Thomistic interpretation of the Aristotelian psychology was considered to be "true" by Pomponazzi. However, in Nifo's *De intellectu*, I. V, cap. 41, we have seen how problematic and ambiguous this type of 'truth' can be in the hands of Renaissance Aristotelians.

<sup>16</sup> *Quaestio*, 189 and 192. Pomponazzi quoted Aristotle's *Metaphysics*, XII.7, 1072b14-23, and Averroes's commentary, "te./co." 51, in *Opera Aristotelis cum Averrois commentariis*, 11 vols., Venetiis 1562-1574, tomus VIII, 337: "Et ideo hoc nomen scientiae equivoce dicitur de scientia sua et nostra. Sua enim scientia est causa entis: ens autem est causa nostrae scientiae." See also Averroes, *In De anima*, 501.

<sup>17</sup> *Quaestio*, 188: "Si intellectus denominatur intelligere ex eo quod forma, puta asini, perficit ipsum intellectum etc., ista forma asini aut dat esse ipsi intellectui, aut non; si non, ergo non perficit, si vero dat esse ipsi intellectui et prius non habebat, ergo intellectus recipit de novo tale esse."

planation for the relation between the possible and the agent intellects, as well as for human knowledge of universals<sup>18</sup>. The view that human knowledge originates from the sensible world plays a crucial role in the subsequent polemic with Themistius' nativist psychology of cognition<sup>19</sup>.

Epistemologically significant is the position developed by Pomponazzi in his final discussion and solution of the "rationes" of his adversaries, which he summarized at the outset of the first lecture. Analyzing the dilemma of the species' being either actually or potentially intelligible, Pomponazzi drew the following conclusion, which is at first glance rather puzzling:

(...) dico quod species est actu intellecta illo modo, scilicet quod ab ea non potest abstrahi alia species, est etiam actu intellecta quando actu intelligitur, postquam vero actu non intelligitur.<sup>20</sup>

In the context of this passage, Pomponazzi argued that the sensible images reach the intellectual soul, in a manner similar to the chain of multiplied species in the medieval perspectivistic tradition. Abstracted from lower-level species, the intelligible species represents a final result of that chain. By virtue of the intervention of the agent intellect, the intelligible species has intrinsic intelligibility and can therefore be actually known. Thus, although the species is connected to the stream of images occurring in the single subject of knowledge<sup>21</sup>, it may be viewed as an abstract entity and therefore as something "actu intellecta", in the sense that no other species can be abstracted from it.

A similar notion of "species intellecta" is found in the early works of Thomas, where it stands for the intelligible species insofar as it is received and thus captured by the intellect<sup>22</sup>. Pomponazzi was apparently not aware of the fact that the intelligible species, characterized as "intellecta", may be challenged as

<sup>18</sup> *Quaestio*, 188-89.

<sup>19</sup> *Quaestio*, 196-200. In this context, on p. 200, Pomponazzi drew the distinction between Themistius' *Paraphrasis de anima* and his commentary on *Metaphysics*, XII, which was mentioned in chapter I, § 2.

<sup>20</sup> *Quaestio*, 201.

<sup>21</sup> For their preservation the species depend on the phantasms; see *Quaestio*, 203. This view played a crucial role in Jandun's determination of the origin of intelligible species; cf. ch. IV, § 4.3.

<sup>22</sup> Thomas, *In II Sent.*, dist. 17, q. 2, a. 1, ad 3um.

being an intermediate object, and hence as standing in the way of the intellect's grasp of the cognitive object, more narrowly defined<sup>23</sup>. I do not think that Pomponazzi regarded the species as primarily known, however, but that he was merely attempting to emphasize its cognitive role in the mind's first act and in acts of remembering.

The species is an immaterial accident generated by the agent intellect as its main cause<sup>24</sup>. The essential connection between species and sensory representations is highlighted again in Pomponazzi's solution of the paradox of the numerical relation between species and cognitive act in the knowledge of one and the same thing grasped simultaneously by, now, three persons. Remarkably, Pomponazzi's discussion of this puzzle (known already from the works of Jandun and Nifo) integrates elements borrowed from Duns Scotus, and most likely also from Gregory of Rimini<sup>25</sup>. Endorsing the central tenet of nominalist ontology, Pomponazzi's reply pivots on the irreducible singularity of the sensible object, formally contained in its "haecceitas". The same singularity is assigned to every species abstracted from this unique entity:

Et credo, nec possum oppositum imaginari, quod si cogitativa mea cogitat tres res eiusdem speciei, dico quod hoc facit per tres species eiusdem speciei distinctas numero; unde si cogito patrem meum, matrem et sororem, habeo tres species, et quod hoc sit verum patet quia stat in me de facto ita [est] quod ego obliviscar unius speciei et recorder alterius, quod non esset si per eandem speciem intelligerem patrem, matrem et sororem etc. (...) Respondeo quod illae species realiter distinguuntur per suas haecceitates. Sed contra, quia dicitur quod multitudo in specie est per materiam quantam etc. Dico quod ab extrinseco species distinguuntur per materiam quantam, ab intrinseco vero per suas haecceitates.<sup>26</sup>

Pomponazzi did not tackle the numerical paradox in the same systematic manner found in Nifo, whose solution of the puzzle was

<sup>23</sup> See, for example, Ockham's arguments against intelligible species, analyzed in ch. IV, § 3.1.

<sup>24</sup> *Quaestio*, 201-202.

<sup>25</sup> For the influence of Gregory of Rimini on Pomponazzi, see also Gregorius Ariminensis, *Lectura super primum et secundum Sententiarum*, ed. A.D. Trapp & V. Marcolino, tomus I, Berlin-N.Y. 1981, vii-viii.

<sup>26</sup> *Quaestio*, 204.



rather more thoroughpaced. First of all, notice that Nifo's piece of gold in Pomponazzi's hands has become an abstract concept, referring to three individual objects, namely his mother, father, and sister, all of whom belong to the same classificatory species of human beings. Now, Pomponazzi argued that the individuality of the various species abstracted from objects belonging to the same classificatory species is due solely to their sensible origin. In effect, he simply presumed that the multiplicity of species which characterizes the activity of the "cogitativa" reappears at the mental level. However, considering that the intellect is unique<sup>27</sup>, whereas the "cogitativa", as superior human faculty, is not, this multiplicity of intelligible species would seem to stand in need of an independent argument. But, apparently, Pomponazzi did not think this necessary: he tacitly assumed that the numerically distinct species, referring to a specifically identical object and arising in the physiological structure of the human soul (the "cogitativa"), are received by the unique intellect without losing their singularity. While following Nifo's line of argument, Pomponazzi in effect greatly reduced its force by postulating premises without arguing their intrinsic plausibility; *de facto*, he gave no real solution to the puzzle.

The issue of the singularity of sensible reality and the origin of cognition was analyzed in more detail in another work by Pomponazzi. In a *Quaestio de universalibus*, also published by Poppi<sup>28</sup>, Pomponazzi explicitly borrowed some of Gregory of Rimini's views on the sensible individuals as primary objects of human knowledge. Pomponazzi observed that human beings can only form universal concepts if singular entities impress themselves upon the mind:

Imprimitur enim primo singulare in mente et ab ipso sumitur similitudo essentialis quae reperitur in omnibus eiusdem rationis, et ex

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<sup>27</sup> Notice that Pomponazzi was still endorsing Averroes' psychology here; see *Quaestio*, p. 205: "(...) quia anima intellectiva est aeterna a parte ante et a parte post, non dependens a materia, species vero intelligibilis dependet a materia in fieri et conservari; quare non oportet quod anima intellectiva sit numerata."

<sup>28</sup> *Quaestio de universalibus*, in Pietro Pomponazzi, *Corsi inediti dell'insegnamento padovano*, cit., vol. II, 95-151.

ista similitudine essentiali reperta causatur universale sic, scilicet quod immediate a similitudine essentiali, mediate autem a re.<sup>29</sup>

By virtue of the impression caused by a singular object, the human mind forms an “essential similitude” which represents the essence of the object insofar as it is common to its specific class. This essential similitude, once grasped (“recepta”), enables the generation of the universal concept. Thus, by virtue of a mental act concerning the similitude of a singular essence, grasped as universally predicable, the mind may conceive the universal. Pomponazzi did not make explicit reference to this conception in his question on intelligible species, but I think that the essential similitude can be identified with the intelligible species. Indeed, this would account for the mediating function of the species between the singular entities and the universal concepts. While explaining some obscure points in the *Quaestio de speciebus intelligibilibus*, this construction may also give rise to serious problems. Pomponazzi apparently believed that singular sensible things are capable of directly determining the mind. Moreover, he apparently believed that the mind for its knowledge of essences and their universal features depends essentially upon these impressions. This inevitably suggests that mind reflects on its own ‘passions’, namely, on the impressions, rather than elaborating upon the sensory information of the inner senses. But a mind reflecting on its own impressions stands in serious danger of being condemned to an act that is terminated by these very impressions<sup>30</sup>. In other words, instead of establishing a robust relation between sensible reality and intellectual act, the singular object impressing itself may prove to be an obstacle for any such relation. That Pomponazzi was somehow aware of this danger may be gathered from his

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<sup>29</sup> *Quaestio de universalibus*, 127. For Gregory’s conception of the intelligible species as primarily mnemonic contents, see ch. IV, § 3.3. Thomas Wilton (ch. IV, § 4.1), Gregory of Rimini (ch. IV, § 3.4), Peter of Ailly (ch. V, § 1.1), Paul of Venice (ch. V, § 3.1), Lefèvre d’Étaples (ch. VI, § 1.4), and Agostino Nifo (ch. VI, § 3.3) held that a species-dependent knowledge of a singular thing is a first condition for abstractive cognition of the universal.

<sup>30</sup> This objection was crucial in the neo-Augustinian opposition cf. ch. III, § 3, *passim*; see also Sextus Empiricus’ criticisms of the Stoic cognitive impression (ch. I, § 1.4.3).

refutation of the argument that the species doctrine would inevitably lead to an infinite regress of mediating principles.

Pomponazzi's reply to the infinite regress objection hinged on the assumption that an infinite regress is possible only in an accidental order. It is remarkable that Pomponazzi referred to Gregory for this thesis—a reference that was surely more than a casual remark<sup>31</sup>. A concept (for that is what the species has been tacitly reduced to in the meantime) may refer to, and signify, the thing represented as well as itself. Insofar as it represents something other than itself, no infinite regress is conceivable. If the concept is considered as self-referring, however, this possibility looms large<sup>32</sup>. With this feeble and not very convincing artifice, Pomponazzi hoped to have established a firm link between intellect and sensible reality. The above distinction, so he must have thought, should suffice to ensure that the cognitive object does not wane and vanish behind an infinite regress of formal principles.

In his essay on this question, Poppi has suggested that Pomponazzi ultimately failed to solve the fundamental problems surrounding the cognitive process, and that he did not always appreciate the full extent of the arguments of the adversaries<sup>33</sup>. As noted above, it is indeed hard to resist the impression that some of Pomponazzi's solutions are rather superficial and clumsy. I want to suggest, however, that the significance of Pomponazzi's intervention in the species dispute should not be sought in any alleged originality on his part. Rather, I think that it lies in the fact that Pomponazzi—who on other occasions left no stone unturned to present himself as an independent philosopher—was developing here an essentially syncretistic solution, adopting without any apparent hesitation almost exclusively medieval Scholastic conceptions<sup>34</sup>. He effectively sought to formulate a naturalistic doctrine of human knowledge in terms of conceptions borrowed from Scotistic and early nominalist

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<sup>31</sup> *Quaestio de speciebus*, 206, refers to Gregory, *In II Sent*, d. 16.

<sup>32</sup> *Quaestio de speciebus*, 207.

<sup>33</sup> *Saggi sul pensiero inedito di Pietro Pomponazzi*, "Introduzione", 16 and 19.

<sup>34</sup> We should not forget, however, that his lectures on the intelligible species were clearly ad hoc, and that they cannot be put on a par with his published views in *De immortalitate animae*, for example.

metaphysics. Seen from this perspective, it makes perfect sense that his argumentation pivoted on the singularity of species and concepts—which Pomponazzi indeed failed to adequately distinguish from one another. The conclusion that the concept has thereby been reduced to the phantasm strikes me as unwarranted, or at least precipitate<sup>35</sup>. According to Pomponazzi, the intelligible species has an irreducible singularity; at the same time it may be seen as an essential similitude common to more objects of the same class. Therefore, it may serve as a platform for the generation of universal concepts. Maybe this inspired Poppi's conclusion that in Pomponazzi the abstraction makes way for a process of generalisation<sup>36</sup>.

As a typical product of an as yet pre-humanistic Aristotelianism, Pomponazzi's question referred to the past; as it was neither published nor copied by hand, its influence on later disputes has been negligible<sup>37</sup>.

## 1.2. Marcantonio Zimara

Marcantonio Zimara's *Quaestio qua species intelligibiles ad mentem Averrois defenduntur*, written at about the same time as Pomponazzi's question, was copied many times before its first edition in 1554, and was then already well-known<sup>38</sup>. Pomponazzi

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<sup>35</sup> *Saggi sul pensiero inedito di Pietro Pomponazzi*, 112; see also H. Skulsky, "Paduan epistemology and the doctrine of the one mind", 353; Di Napoli, *L'immortalità*, 289-90, and 253, note 39.

<sup>36</sup> It seems a bit of an anachronism, however, to consider this generalization as a sort of anticipation of the modern mathematical generalization; cf. Poppi, "Introduzione", 15, and "La discussione", 110-11.

<sup>37</sup> In his analysis of intelligible species, Michael De Palacios, *In tres libros Aristotelis de anima commentarii*, Salamanticae 1557, referred on p. 260vb to Pomponazzi's opinion about the knowledge of angels, which is species-independent.

<sup>38</sup> Marcantonio Zimara, ca. 1475—1532; an Italian philosopher active at various universities (Padua, Salerno, Naples); among his many works on Aristotle are the *Tabula* and *Theoremata*, frequently reprinted throughout the sixteenth century. For discussion, see A. Antonacci, *Ricerche sull'aristotelismo del Rinascimento. Marcantonio Zimara, I: dal primo periodo padovano al periodo presalermitano*, Lecce-Galatina 1971. A. Poppi, "La discussione", shows on pp. 162-63, that Zimara's question has been written ca. 1506-1507. I have consulted the first edition that was printed in Naples in 1554 (reprint 1575). It was also reprinted together with Girelli's treatise against Zimara, in Venice 1561. The

looked for support for his arguments in mainstream Scholastic philosophy. Zimara, by contrast, though himself a pupil of the Scotist theologian Antonio Trombetta, intended to defend a form of orthodox Averroism as developed in the Middle Ages<sup>39</sup>. This did not mean that he thought of himself as a follower of Jandun, however, at least not with regard to the doctrine of species<sup>40</sup>. Zimara's question was the first explicit defence of the intelligible species on Averroistic grounds, as opposed to the automatic acceptance of this conception by medieval Averroists<sup>41</sup>.

Zimara's treatise opened with a brief survey of possible objections against the notion of species on Averroist grounds (in fact a summary of the well-known arguments of the opposition<sup>42</sup>). The actual defence set in by refuting a theory suggested by one of the "moderns" as an alternative for the formal mediation in intellectual knowledge. The core of this doctrine was the assumption that the possible intellect receives the "formas rerum materiales" according to their "esse formale", and as "locatum in loco"<sup>43</sup>. It is not difficult to discover in this view the position of Achillini with regard to the modalities of the cognitive act<sup>44</sup>. To this view Zimara objected that the intellect would automatically become

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problem of the intelligible species in Zimara has been discussed by A. Poppi, "La discussione", 161f, and by A. Antonacci, *o.c.*, 236f.

<sup>39</sup> For discussion of Zimara's thought and of his activity as editor of Aristotle and Averroes, see Garin, *Storia della filosofia italiana*, vol. II, 540; Nardi, *Saggi*, 321-55; for his relation with medieval philosophers, see Mahoney, "Duns Scotus and the School of Padua around 1500", 224, and idem, "Saint Thomas and the School of Padua", 557-59; for his polemics with contemporary Scotism, see A. Antonacci, "Il pensiero di Duns Scoto negli scritti di Marcantonio Zimara", in *Regnum hominis et regnum Dei*, Roma 1978, 249-256, on pp. 250-253.

<sup>40</sup> See *Quaestio*, Bii<sup>v</sup>, where Zimara departed from Jandun's idea that the agent intellect's principal causal role regards the intellection; see also *Theoremata*, Venetiis 1563, 144va.

<sup>41</sup> As we have seen in ch. VI, § 3.1, also Trombetta held that Averroes argued for species, but he did not profess himself to be an Averroist.

<sup>42</sup> *Quaestio*, Ai<sup>r</sup>: (1) an intellectual substance cannot receive accidents; (2) a separate form cannot undergo any essential or accidental passion; (3) intellectual knowledge does not imply any transformation of the knowing faculty (Averroes' interpretation of *Physics*, VII, te. 20); (4) the intellect would be in act before knowing; (5) the material phantasm cannot act upon the immaterial intellect.

<sup>43</sup> *Quaestio*, Ai<sup>r</sup>.

<sup>44</sup> See ch. VI, § 2.2; for the contrasts between these two philosophers, cf. Nardi, *Saggi*, 231-33; Antonacci, "Il pensiero di Duns Scoto negli scritti di Marcantonio Zimara", 250.

“formaliter”, that is, *realiter*, that which it knows. In other words, it would follow that physicians must, logically speaking, always be healthy<sup>45</sup>. Zimara thus made explicit the hidden consequences of Achillini’s somewhat paradoxical claim that the intellect is none of the things successively received by it. Indeed, Zimara reproached his adversary (who was not mentioned by name, however) for returning to an Empedocles-like position. On that view, so Zimara argued, the intellect is essentially unable to gain universal knowledge, because the material forms can be thought only as “*quanta & signata*”<sup>46</sup>. Even if the author under discussion intended to take recourse to a possible illumination by the agent intellect of the incoming (material) forms, this would not bring relief for his problematic position<sup>47</sup>.

The issue of the agent intellect’s operation gave Zimara the occasion to analyze the problem of intelligible species in the context of the production of natural forms. Zimara took particular care to distinguish the position of Averroes from those of Avicenna, Themistius, and Alexander, concluding that the agent intellect, according to Averroes, does not produce any substantial or material forms. On this analysis of Averroistic principles, both the Avicennian “*dator formarum*” and the immediate production of natural forms by the agent intellect are ruled out. Furthermore, it is ruled out that material forms would receive an “*esse universale*” from the agent intellect. Also excluded is the idea that the latter would cause an “*accidens spirituale*” in the material form so as to enable it to actualize the possible intellect. Indeed, “*omne quod recipitur in aliquo, recipitur per modum recipientis*”, and therefore this possible spiritual accident, once received by the material form, would inevitably be materialized<sup>48</sup>.

As a matter of fact, Zimara showed that Achillini c.s. can be defeated by their own means, that is, by testing the consistency of all proposed theses and views against the conceptual framework of Peripatetic philosophy. Zimara was primarily interested in preserving Averroist philosophy, as he conceived it, in as pure and

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<sup>45</sup> *Quaestio*, Ai<sup>r-v</sup>.

<sup>46</sup> *Quaestio*, Ai<sup>v</sup>; cf. Aii<sup>r</sup>: the intellect would know “*signate*”.

<sup>47</sup> *Quaestio*, Aii<sup>r</sup>-iii<sup>r</sup>.

<sup>48</sup> *Quaestio*, Aiii<sup>r</sup>.

consistent a form as possible. To achieve this goal he did not shrink from simple tricks, as appears from the fact that he explained the absence of the term "species" in the Commentator's work by simply noting that the Arabs lacked a word for this concept and had to make do with the term "forma"<sup>49</sup>. Accordingly, Zimara rebuked Burley for his "lapsus" about Averroes' alleged rejection of intelligible species<sup>50</sup>.

Zimara then turned to a thesis which he probably derived from Nifo: the thesis that the intellection eventually coincides with the "forma" or "quidditas" of the thing known, which is not received "subiective" by the intellect but only "obiective"<sup>51</sup>. Zimara raised two objections against this position. The first objection is somewhat puzzling, and apparently turns the argument of his very opponents against themselves. When Aristotle and Averroes speak of the intellect as "denudatus", so Zimara argued, they must be referring to a "subjective" reception, because "objectively" the intellect is anything but "denudatus". Zimara enigmatically grounded the ontological 'thickness' of the intellect in the relation it maintains with itself:

Nam certum est quod intellectus possibilis recipit seipsum obiective. Et tamen non est denudatus a seipso.<sup>52</sup>

At first glance this may seem strange, but Zimara was in fact convinced that the possible intellect receives itself. Most likely, in the above passage Zimara was trying to find a solution to the thorny problem of the ontological status of the possible intellect<sup>53</sup>. The intellect's self-reception, qualified as "obiective", implies that the cognitive reception of external reality is necessarily "subjective".

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<sup>49</sup> *Quaestio*, Aiii<sup>r</sup>; cf. already Jandun, *Super libros De anima*, 300, and Trombetta, discussed in ch. VI, § 3.1.

<sup>50</sup> *Quaestio*, Bvi<sup>r</sup>: the possible intellect is separate; yet, it is the "infima intelligentiarum", and therefore it can and must receive accidents.

<sup>51</sup> *Quaestio*, Aiii<sup>v</sup>.

<sup>52</sup> *Quaestio*, Aiv<sup>r</sup>.

<sup>53</sup> See already Theophrastus, *Fragmentum* 1c; for discussion of this issue, cf. E. Barbotin, *La théorie aristotélicienne de l'intellect d'après Théophraste*, Louvain-Paris 1954, 141. By unduly stressing the "tabula rasa" metaphor, one would be in serious danger of reducing the intellect to a collection of continuously changing impressions. It is probably for this reason that Theophrastus was eager to attribute to the possible intellect an effective role in the cognitive act. For a similar approach in medieval authors, see ch. II, § 1.5, ch. III, § 3.3, § 4.2, and § 5.1.

Later on, we find Zimara arguing that this “subjective” reception must involve species.

Zimara’s second objection rests on the assumption that without intelligible species the agent intellect would become superfluous<sup>54</sup>. Zimara also gave a final and more convincing argument, which turned on intellectual memory<sup>55</sup>. This he presented as the strongest argument in behalf of species: if the possible intellect receives the “quidditates” only “objective”, how can they ever persist in the intellect? For this persistence requires a “subjective” reception, namely, of species, as we shall see below. Granted that the known “quidditates” have an accidental nature, one must accept that they inhere in a “subiectum”, since accidents are unable to subsist independently. Moreover, if Averroes, or an Averroist philosopher, were to deny all “subjective” reception whatsoever, then the distinction between essential and accidental potentiality with respect to science would become impossible. Finally, if one endorses the core of Peripatetic psychology, it must be admitted that the senses and the intellect, though different in nature, must be similar in at least one respect. And this similarity can only be their “subjective” reception of information. Indeed, it would be absurd to assume that Averroes spoke only “metaphorice” or “aequivoce” about the similarity of their modes of reception<sup>56</sup>.

In the same context, Zimara claimed that Averroes attacked Theophrastus and Themistius for their rejection, *inter alia*, of the intelligible species. He thus unwittingly foreshadowed the subsequent doctrine of the ancient opposition against the species, endorsed by many later schoolmen<sup>57</sup>. Moreover, in a critical analysis of Jandun’s view of the causation of the intellection<sup>58</sup>, Zimara es-

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<sup>54</sup> *Quaestio*, Aiv<sup>r</sup>. A similar argument was already formulated during the Middle Ages, see: Duns Scotus, *Ordinatio, Opera omnia*, ed. C. Balic and others, Città del Vaticano, vol. III, liber I, dist. 3, q. 1, 216-17; Alphonsus Vargas Toletanus, *In tres Aristotelis libros De anima*, Vincentiae 1608, 85a f.

<sup>55</sup> As a matter of fact, Zimara presumed the existence of an intellectual memory in order to fight the opposition against species; this view was not generally accepted by Averroist authors during the Renaissance, however; cf. Buccaferrea’s and Girelli’s Averroistic inspired opposition against intellectual memory and the doctrine of species.

<sup>56</sup> *Quaestio*, Aiv<sup>v</sup>- Bi<sup>r</sup>.

<sup>57</sup> *Quaestio*, Bi<sup>v</sup>; see ch. I, § 2.

<sup>58</sup> *Quaestio*, Bii<sup>v</sup>; cf. Biv<sup>v</sup>.



tablished that the agent intellect needs a “vehiculum” in order to transfer contents from one order to another—yet another argument for intelligible species<sup>59</sup>, which arise from the synergy of the agent intellect and the phantasms.

After solving a small number of “dubia”<sup>60</sup>, Zimara returned to the distinction between the “subjective” and “objective” reception, which played a crucial role in his argument for intelligible species. The context of this new discussion is the still unresolved problem of how one effectively knows the quidditative essences. Now, Zimara was convinced that if one wants to assign to the known form an “esse obiectivum”, this necessarily presupposes a prior “subjective” production of a species, required as a vehicle for presenting the aforementioned content. In other words, the cognised object reaches an “objective” being only on condition of a “subjective” reception of its vehicle in the intellect:

Sed ad hoc solvimus dicentes: quod tales quidditates relucens in speciebus intelligibilibus: ad causationem specierum factam ab intellectu agente causantur species subiectivae in intellectu possibili: et ex consequenti quidditas relucens in specie causatur in intellectu in esse obiectivo. (...) Nam ego posui quidditatem relucens in specie intelligibili non sicut accidens in subiecto recipi in intellectu possibili: sed solum est ibi in esse obiectivo. Et sicut cognitum in cognoscente: sed bene posui ipsam speciem intelligibilem esse in intellectu per informationem: sicut accidens in subiecto.<sup>61</sup>

The co-operation of agent intellect and phantasm results in a species containing the cognitive object “in esse obiectivo”. It is only in virtue of this species which is received “subjective”, that the object to be known also exists at the mental level in an “esse obiectivum”<sup>62</sup>.

<sup>59</sup> *Quaestio*, Bii<sup>v</sup>.

<sup>60</sup> *Quaestio*, Biii<sup>r-v</sup>: the “dubia” regard the following items: (1) Aristotle does not speak of species; (2) the intellect receives “universaliter”, and therefore it cannot receive anything new; (3) the status of the agent intellect as “primus motor”. See also *Theoremata*, 198vb.

<sup>61</sup> *Quaestio*, Bv<sup>r</sup>. The background of this view was clearly Averroistic; cf. James of Piacenza, who in his *Lectura super III de anima*, ed. Z. Kuksewicz, Wrocław-Warsawa-Kraków 1967, explicitly made this distinction on p. 262: “Nota, quod lapis est in anima obiective, sed species lapidis est in anima subiective, licet non formaliter, ergo etc.” However, James did not develop a systematic account of this distinction in as thorough a way as Zimara.

<sup>62</sup> See also *Theoremata*, 201ra: “& sic abstrahere est operatio intellectus agentis, virtute cuius, obiectum relucens in phantasmate causatur in esse obiectivo in specie

Thus, the intelligible core of sensible reality can assume a mental status only by virtue of a prior, physiologically conceived, process of transformation. This means that Zimara decidedly dismissed a possible identification of the known "quiditates" with the Platonic "ydeae". The quidditative essences depend in fact on the phantasms, which *in se* are not sufficient to found intellectual knowledge, as Zimara argued elsewhere in an interesting debate with Stoicism<sup>63</sup>. Although the *same* form is present both in matter and in the intellect, the modalities of this presence are essentially different. According to its "esse reale et formale" the form is present in matter, and only "obiective et repraesentative" it is present in the human mind<sup>64</sup>.

Assigning to objects, insofar as they are effectively known, an "esse obiectivum", Zimara adopted a view that, in the Middle Ages, had been suggested as an alternative to the notion of intelligible species<sup>65</sup>. Some medieval authors had questioned the tenability of the species doctrine as a theory of knowledge acquisition, as it presumed a physical-like reception of mental representations. Apparently, Zimara took their doubts to be legitimate. This also explains why he assigned an "esse abstractionis" to the universal concept. According to Zimara, the universal (like the known "quidditas") transcends the status of an inherent accident. On this basis, he was able to exclude that the intellect becomes *realiter* what it knows.

With these seemingly futile distinctions of terminology, Zimara replied to the objections raised by those opponents of the species whose alternative was to postulate an "objective" existence of the things, insofar as known by the human mind. His main targets here

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intelligibili, quae est effectus intellectus agentis, & phantasmatis." The context in *Theoremata* is formed by the doctrine of the four degrees of abstraction in Albert.

<sup>63</sup> See *Tabula dilucidationum in dictis Aristotelis et Averrois*, Venetiis 1543, 110r. If we were to accept the Stoic conception of imagination as *typosis*, the sensible species would coincide with sensation, and the intelligible species would be identical with the intellection. However, according to Zimara, it is essential to distinguish in knowledge between object, potency, and function.

<sup>64</sup> *Quaestio*, Bv<sup>r</sup>.

<sup>65</sup> See ch. IV, § 1.5.

were probably Vernia, Achillini, and Nifo<sup>66</sup>. Grounding the “objective” existence of the things known in a prior “subjective” reception of the intelligible species, which serve as vehicles for the cognitive contents, he successfully integrated the alternative view within his own conceptual framework, while at the same time depriving the opposition of an important weapon. As we have seen, Zimara’s primary aim was to provide a foundation for the species doctrine that is consistent with Peripatetic physics; by that same token, he made it clear that the alternative of the ‘objective’ presence of cognitive objects in the mind is acceptable only if paired with the notion of ‘subjectively’ received intelligible species. This analysis was a significant contribution to the discussion on ‘objective’ and ‘subjective’ existence of mental content and representation, respectively, in the context of Peripatetic cognitive psychology. Indeed, Zimara demonstrated that accepting the Peripatetic physicalist framework for psychological investigation does not stand in the way of acknowledging aspects of human knowledge that transcend this framework. Conceptually speaking, the significance of Zimara’s contribution in this field lies chiefly in its attempt to explain how a non-physicalist view of mental content may be grounded in a physiologically based theory of mental representation.

## § 2. SCHOLASTIC CONTROVERSIES ON ABSTRACTION AND SPECIES

The interventions of Pomponazzi and Marcantonio Zimara in the species dispute may be characterized as efforts to preserve the classical Peripatetical heritage in a pure form and to defend it from the ‘modernisms’ of their days. Although they also introduced novel elements into the discussion, their contributions were on the whole defensive in nature, Pomponazzi tending toward a certain traditionalism, Zimara aiming strenuously to protect the physicalist foundations of the Peripatetic theory of knowledge acquisition.

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<sup>66</sup> Cf. *Quaestio*, Bv<sup>v</sup>, where Zimara spoke of an abuse of Albert by modern Averroists.

By contrast, the authors examined in the present section held the existence and need of intelligible species to be self-evident. Their focus of attention was on a different field of problems, namely, the problems raised and left unresolved by Thomas with regard to the relation between (agent) intellect and phantasms in the production of the intelligible species<sup>67</sup>. Their philosophical effort was directed accordingly, namely, towards the proper explanation of how the sensory representations are illuminated by the agent intellect. Caietanus, Sylvester of Ferrara, and Javelli each developed views on this point that would later be important for the authors of the Second Scholasticism<sup>68</sup>.

### 2.1. *Caietanus*

Thomas de Vio, surnamed Caietanus after his place of birth Gaeta, where he also ended his career as bishop<sup>69</sup>, occupies an important place in the history of Scholastic Aristotelianism, not only because of his unconventional attitude in the immortality dispute<sup>70</sup>, but also because he was the principal initiator of the tradition of commentaries on the works of Thomas, which in Scholastic centers of

<sup>67</sup> For a summary discussion of 16th-century Thomism, see C. Giacon, *La seconda scolastica*, vol. I: *I grandi commentatori di San Tommaso*, Milano 1944, cap. II; P.O. Kristeller, *Le Thomisme*, cit.

<sup>68</sup> See, for example, Franciscus Toletus, *Commentaria Unà cum Quaestionibus. In tres libros Aristotelis De anima*, Venetiis 1605, 142vab; Suarez, *Liber de anima*, 615b-17b; Collegium Conimbricense, *Commentarii in tres libros De anima Aristotelis Stagiritae*, Venetiis 1616, 289b-291a, 297, 304b, 305, 311a, 313b; Antonius Ruvius, *Commentarii in libros Aristotelis Stagiritae (...), de Anima (...)*, Lugduni 1613, 663-64; Rodrigo de Arriaga, *Cursus philosophicus*, Antwerpiae 1632, 726b; Johannes de Sancto Thoma, *Cursus philosophicus Thomisticus*, Taurini 1930-37, 305; Collegium Complutense, *Disputationes in tres libros Aristotelis De anima*, Lugduni 1637, 459b, 482b; Sebastian Izquierdo, *Pharus scientiarum*, Lugduni 1659, 2b, 39a.

<sup>69</sup> Thomas de Vio, 1468 Gaeta—1534 Rome; 1484 entered the Dominican order and began studies in Naples; 1488-91, studied in Bologna and Padua; 1492-93, magister studentium at the convent of the order in Padua; 1494, after success in public debate with Pico della Mirandola magister theologiae there; 1495-97, professor of metaphysics *in via Thomae* at the university, there; 1497-99, professor of theology at the University of Pavia; 1499-1501, lector at the studium of the order in Milan; from 1501 until his death, leading functions in his order and ecclesiastical functions.

<sup>70</sup> See, B. Nardi, *L'alessandrismo nel Rinascimento*, Roma 1950, 136-139; E. Gilson, "L'affaire", 41-42. In his attitude towards Aristotle, Caietanus in a sense carried on the line of Bessarion; see Nardi, *L'alessandrismo*, 112-117.

learning would eventually supersede the commentaries on Lombard's *Sentences*<sup>71</sup>. His main contribution to the debate on intelligible species was his theory of the role of the agent intellect in the generation of intelligible species. As noted above, it was not the need for intelligible species as such, but rather their origin and mode of production, that was discussed by the authors in this section. In particular the mode of production was seen as a burning issue, not only by Caietanus, but also by his colleague Sylvester of Ferrara.

Caietanus' cognitive psychology started from two fundamental assumptions that were difficult to reconcile, yet not mutually inconsistent. Firstly, Caietanus took it to be evident that the immaterial mind is a self-sufficient principle of knowledge<sup>72</sup>. Secondly, he presumed the contents of our intellectual acts to be grounded in the physiological phantasms<sup>73</sup>. Caietanus subscribed to a genuine form of Aristotelianism, and hence excluded the existence of in-born species as hypothesized by James of Viterbo, for example<sup>74</sup>. Nor did he accept the view that the phantasm is the sufficient cause of the generation of the intelligible species, as Jandun had suggested<sup>75</sup>. The intellect 'drinks in' the intelligible object, rather than passively undergoing it<sup>76</sup>. Convinced of the unbridgeable gap between intellect and phantasm, and therefore well-aware of the im-

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<sup>71</sup> See M. Grabmann, "Die Stellung des Kardinal Cajetan in der Geschichte des Thomismus und der Thomistenschule", in *Mittelalterliches Geistesleben*, vol. II, München 1936, 602-613, on pp. 608-609. For the pioneer role of Henry of Gorcum, John Versor, and Peter Crockaert in this tradition, see ch. V, § 2.2, 2.5 and 2.7.

<sup>72</sup> Cf. *In primam Summae Theologiae partem commentaria*, Parisiis 1514, I, q. 14, a. 1, n° 5, 37r: "Cognoscens autem recipiens cognitum: non recipit ipsum propter operationem alicuius compositi resultantis ex eius operatione: neque propter operationem ipsius cogniti: sed propter specificationem proprie operationis ipsius cognoscentis." Notice that in a similar context Caietanus invoked the authority of Augustine, p. 357v.

<sup>73</sup> Thomas de Vio, *Commentaria in De anima Aristotelis*, ed. P.I. Coquelle, vol. I-II, Roma 1938-39, p. 257.

<sup>74</sup> *Commentaria in libros Aristotelis de Anima*, Florentiae 1509, K2ra; this reference testifies that the *Quodlibeta* of James were not buried in oblivion during the Renaissance.

<sup>75</sup> *In De anima*, K5va; Caietanus attacked Jandun's *In de anima*, III, q. 25.

<sup>76</sup> Accordingly, Caietanus emphasized that "intelligere" should be understood as "operari", and not as "pati"; cf. *In primam partem*, I, q. 79, a. 2, n° 19, 358r-v. For Zabarella's critique of the notion "imbibere obiectum", see ch. IX, § 1.1.

possibility of the agent intellect's dealing directly with sensory representations, Caietanus developed a doctrine of "objective" illumination, both in his commentary on the *Summa theologiae* (1507) and in his exposition of *De anima* published in 1509<sup>77</sup>.

The problem of the relation between the agent intellect and the sensory images was discussed by Caietanus in his analysis of *Summa theologiae*, I, q. 79, a. 3. His exposition there starts with a reference to Durandus who, according to him, took the road of Plato, and another reference to Godfrey of Fontaines who, while questioning the position of the agent intellect, ended up with a *de facto* denial of the illumination<sup>78</sup>. At first sight, Caietanus gives the impression that he was trying to skirt the problem he was supposed to solve, when it is said that the agent intellect actualizes contents 'from' the potentiality of the possible intellect:

(...) breviter dici possit quod agit educendo de potentia fantasmatis non subiectiva sed ministeriali & ideo eductum non est in eo: sed in potentia subiectiva quae est intellectus possibilis.<sup>79</sup>

Without addressing at this point the question of how the "eductio ministerialis" is to be understood<sup>80</sup>, Caietanus apparently preferred to deal first with the relation between the intelligible (the intelligible form or object) and the intelligible species.

Caietanus proceeded as follows. If it is admitted that the possible intellect must be actualized by something that is effectively actual, then it follows that the intelligible must logically precede the intelligible species, and hence that the former must be seen as the cause of the latter. However, if the question is considered from the point of view of the agent intellect, insofar as it may be compared to a light, then the generation of the intelligible species on the basis of the illuminated phantasm necessarily precedes the

<sup>77</sup> For a cursory survey of Caietanus' epistemological thought, see C. Giacon, *La seconda scolastica*, vol. I, 91-101; H.J. Müller, *Die Lehre vom verbum mentis in der spanischen Scholastik*, 121f.

<sup>78</sup> For Godfrey of Fontaines and Durandus, see ch. III, § 3.3, and IV, § 2.1, respectively.

<sup>79</sup> *In primam partem*, 360r. Already Albert (ch. II, § 2.1) and Giles of Rome (ch. III, § 2.3) had postulated an operation of the agent intellect with respect to the possible intellect.

<sup>80</sup> He simply referred to his exposition of q. 85, a. 1, ad 4.

actualization of the possible intellect by the actual intelligible<sup>81</sup>. To solve this paradox, Caietanus submitted, it is imperative that we first give a conceptual analysis of expressions such as “illumination” and “the effects of the agent intellect”, which are generally taken to be self-evident, but which on closer consideration appear to be rather problematic.

It is a generally held opinion (often attributed to Thomas, as Caietanus observed) that the intelligible species can be identified with the intelligible in act, that is, with the effect of the agent intellect, because the operation of the agent intellect terminates first in the species and then in the object represented by the species<sup>82</sup>. With regard to the issue under consideration this view is of no avail, however, as it leaves unexplained the notions of illumination and actualization of the potential intelligibles. In an attempt to shed new light on the problem, Caietanus proposed a “singularis modus dicendi”:

(...) lumen intellectus agentis facit intelligibile in actu in fantasmate per modum abstractionis prius natura quam fiat species intelligibilis in intellectu. Ad cuius evidentem perceptionem ab effectu luminis & abstractionis procedendum est effectus luminis duplex est, scilicet formalis & obiectivus. Formalis quidem est esse luminativum: ut patet in dyaphano. Obiectivus vero est apparere: ut patet in colore; color enim non apparet nisi illustratus.<sup>83</sup>

Following the lines of this comparison (a metaphorical and somewhat singular reading of Aristotelian optics<sup>84</sup>), Caietanus concluded that the illumination of the phantasms is different from that of the diaphanum. As a consequence, opting for the other horn of the dilemma, he suggested that the apparition of colour may be taken as a model for the illumination of sensory representations.

<sup>81</sup> *In primam partem*, 360r-v. For the view of the species as products of the mental act, see already Peter Olivi (ch. III, § 3.4), Gregory of Rimini (ch. IV, § 3.4), and Peter of Ailly (ch. V, § 1.1).

<sup>82</sup> *In primam partem*, 360v. This “communiter” is surprising, since it is not clearly related to any determinate group of authors.

<sup>83</sup> *In primam partem*, 360v-361r.

<sup>84</sup> The distinction between an ‘objective’ and a ‘subjective’ illumination may be connected with an idea found already in James of Piacenza, regarding the illumination of the agent intellect as received ‘objectively’ and not ‘subjectively’ by the phantasms; cf. *Quaestiones super tertium de anima*, ed. Z. Kuksewicz, Wrocław-Varsovie-Cracovie 1967, 89, and ch. IV, § 4.6. See also Zimara’s use of this terminology in his defence of intelligible species, *supra*.

Now, this illumination, which is qualified as "objective", does not apply to the whole content of the phantasm, but is exclusively aimed at releasing the "quidditas" contained in it<sup>85</sup>. Therefore the illumination may at the same time be seen as abstraction:

Unde in proposito imaginor quod cum in fantasmate sit natura haec: adveniente lumine intellectus agentis fantasma illustratur non formaliter: ut diaphanum: sed obiective ut color: qua illustratione splendet atque relucet in fantasmate non totum quod est in eo sed quidditas seu natura tamen & non singularitas illius ei commista: ita quod ista illuminatio est abstractiva: quia facit apparere unum scilicet quod quid est: non apparendo aliud scilicet principium individuans: ac per hoc splendet in fantasmate intelligibile in actu: natura scilicet abstrahens ab hic & nunc & tale intelligibile in actu movet intellectum possibilem.<sup>86</sup>

It is exactly its material and singular nature that distinguishes the phantasm from the actual intelligible. Thus, the abstracting illumi-

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<sup>85</sup> Henry of Ghent's alternative to the doctrine of species was based on this idea; cf. ch. III, § 3.2. However, also Paul of Venice presumed a similar moment in the cognitive process as preceding the production of the intelligible species; see *In libros Aristotelis de anima explanatio*, Venetiis 1504, 137rb: "Notandum secundo quod intellectus agens in prima notitia intellectus possibilis facit quadruplicem operationem. primo quidditatem abstrahit a re singulari: non quia separet loco et subiecto quidditatem a suo individuo: sed facit eam obiectum intellectus absque conditionibus materialibus. Secundo abstrahit fantasma a potentialitate et privatione: quia ubi prius solum erat potentia intelligibile nunc facit ipsum actu intellectum. Tertio abstrahit a fantasmate speciem intelligibilem quam reponit in intellectu possibili: et quia ad hanc operationem active concurrunt fantasmas: quod est agens particulare: immo haec species intelligibilis est singularis. Quarto unit istam speciem cum quidditate: et cum phantasmate: immo intellectus intelligit quidditatem per se: et immediate." Also John Versor, *Quaestiones super tres libros De anima Aristotelis*, Cracovie 1514, 159v, emphasized that the illumination by the agent intellect regarded not the medium but the object to be known. In this context, we should not forget that Versor was one of the main representatives of the Thomas-revival at the University of Paris during the second half of the 15th century; for discussion, see ch. V, § 2.5. For a possible hint at Caietan's illumination theory in Peter Crockaert, see ch. V, § 2.7.

<sup>86</sup> *In primam partem*, 361r. See also 392v-393r and *In De anima*, K5ra: the agent intellect actualizes the "praeexistens in fantasmatis intelligibile in potentia"; and p. K5va: "Imagino igitur quod intellectus agit in fantasma obiective tamen nihil in eo ponendo sed faciendo apparere in eo naturam seu quidditatem lapidis non apparentibus conditionibus individualibus: & hoc prius natura quam fiat species intelligibilis in intellectu: & sic ponitur in fantasmate intelligibile in actu non formaliter: hoc enim tamen in separatis a materia secundum rem est sed obiective." Cf. C. Giacon, *La seconda scolastica*, vol. I, 100: "Dalle parole del Gaetano sembrerebbe quindi che l'intelletto agente non modificherebbe in alcun modo il fantasma, ma, lasciandolo nel suo semplice grado di materialità, vi farebbe apparire soltanto la natura comune e non la singolarità."



nation is like the daylight that only makes visible the colours of an apple, not its flavour<sup>87</sup>. The claim that the singularity of sensible things remains unknowable, as it cannot be represented by the species, imposes a restriction on Thomas' original view. In Aquinas' epistemology it was not the singularity, but only the materiality, that was considered an obstacle for intelligibility<sup>88</sup>.

With the notion of an "objective" illumination Caietanus thought to be able to solve two problems. First, by dint of the agent intellect's illumination the immediate actualization of the possible intellect by the intelligible object is secured. Second, the idea that the phantasm is illuminated 'at a distance' respects the impossibility of any real or physical contact between intellect and phantasm, while at the same time grounding the objective reference of cognitive contents<sup>89</sup>. According to Caietanus, it was this kind of illumination that Thomas referred to in the *Summa contra Gentiles* when he spoke of an operation of the agent intellect in the phantasms. The intellect does not act or operate on the sensible images, but merely shows what they disguise<sup>90</sup>.

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<sup>87</sup> *In primam partem*, 361r. Cf. *In De anima*, K5va: the intellectual abstraction does not consist in an "expoliatio", but in a "reluctentia unius & non reluctantia alterius". For a similar metaphor, see Godfrey of Fontaines, *Quodlibet* V, eds. M. de Wulf & J. Hoffmans, Louvain 1914, q. 10, 37: when light is present milk can be perceived as white without being perceived as sweet. In the same fashion, Godfrey argued, one may distinguish between the quiddity of a material thing as it is represented in a phantasm, and its designation by accidental dispositions. See also Radulphus Brito, *Quaestiones in Aristotelis librum tertium De anima*, in W. Fauser, *Der Kommentar des Radulphus Brito zur Buch III De anima*, Münster 1973, 236-7.

<sup>88</sup> See ch. II, § 3.5; cf. *Summa contra Gentiles*, I.30.277.

<sup>89</sup> *In primam partem*, 361r: "non enim est imaginandum quod ab intellectu agente fluat lumen in fantasma: & quod fantasma illo sussultum lumine: perducatur speciem quemadmodum corpus illuminatum movet visum." See also p. 392v: the agent intellect does not introduce any "virtus intentionalis". The doctrine of a positive action of the agent intellect with respect to the phantasm starts as early as from Jean de Goettingen, examined in Z. Kuksewicz, *De Siger de Brabant à Jacques de Plaisance. La théorie de l'intellect chez les Averroïstes latins des XIIe et XIVe siècles*, Wrocław-Varsovie-Cracovie 1968, 132. Giles of Rome argued that the agent intellect enabled the phantasms to move the possible intellect; the illuminated phantasm occasioned the generation of an intelligible species. The conception of the agent intellect as providing the phantasms with a "virtus" or "vis" was suggested by Vital du Four; see ch. III, § 3.4. Giles' view inspired some 15th-century authors (cf. ch. V, § 2) and Sylvester of Ferrara (see below).

<sup>90</sup> *In primam partem*, 361r-v. The objective illumination would be critically examined by Ferrara (see below), but also by Suarez, see ch. X, § 1.6.

Caietanus' theory of the abstraction-illumination made implicit use of a well-known view from the *Liber de causis*, namely, that each pair of levels of being touch at their extreme ends. As we shall see, this argument "ex ordine" does not so much solve the problems but create new ones instead. This becomes particularly clear if we try to spell out the implications of this view with regard to the relation between the unveiled "quidditas" and the abstracted or produced species<sup>91</sup>.

Returning to the original problem, Caietanus believed he could now explain the relation between the intelligible object and the intelligible species. In accordance with the above distinction between "formal" and "objective", the species can now be defined as the formally intelligible, whereas the "quidditas" should be seen as the objectively intelligible<sup>92</sup>. An unfortunate consequence of this setup is that now the origin and generation of intelligible species remain a mystery. Caietanus may have settled the issue of the relation between intellect and phantasm, but in doing so he gave rise to a new problem regarding the status of the intelligible object, which may be put as follows. On the one hand, the "quidditas" that shines forth from the phantasm is only 'objectively' intelligible, which seems to be an inferior degree of intelligibility with respect to the 'formally' intelligible<sup>93</sup>. On the other hand, the uncovering of this 'objectively' intelligible that is the cognitive object in a strict sense, is seen as logically prior to the generation of species; *a fortiori* it is the necessary condition for the latter's realization<sup>94</sup>.

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<sup>91</sup> See *In primam partem*, 361v, and 393r: "ordo rerum exigit ut supremum infimi attingat infimum supremi."

<sup>92</sup> Cf. also *In de anima*, K5va. Cf. Zimara on the distinction between the 'subjective' (that is, 'formal') reception of the intelligible species and the 'objective' presence of the sensible essence in the mind; see § 1.2.

<sup>93</sup> *In primam partem*, 361v. In a certain sense, the problematic relation between an antecedently unveiled "quidditas" and a subsequently abstracted intelligible species existed already in Paul of Venice; cf. ch. V, § 3.1 and *supra*.

<sup>94</sup> See, *In de anima*, K5 va: "Imaginer igitur quod intellectus agit in fantasma obiective tamen nihil in eo ponendo sed faciendo apparere in eo naturam seu quidditatem lapidis non apparentibus conditionibus individualibus: & hoc prius natura quam fiat species intelligibilis in intellectu: & sic ponitur in fantasmate intelligibile in actu non formaliter: hoc enim tamen in separatim materia secundum rem est sed obiective." In the context of this exposition, Caietanus stressed the difference between himself on the one hand, and Gaetano of Thiene and Capreolus on the other.

Caietanus recommended the proper and careful application of the “vocabula” involved in this question<sup>95</sup>. Unfortunately, however, the problem at hand is not one that can be solved by a linguistic analysis alone. The phenomenon of abstraction, viewed as consisting solely in a “relucentia” and not in an “expolatio”, remains ultimately “mirabile”, as was also admitted by Caietanus himself<sup>96</sup>.

Caietanus’ solution of the problems regarding the origin of the intelligible species, and regarding the duality of immaterial mind and sensory representational devices, must be understood in terms of the conceptual framework developed by his medieval and Renaissance colleagues. As regards his medieval sources, we should mention the contrasting influences of authors such as Thomas and Godfrey of Fontaines. Caietanus was actually trying to explain a problem in Aquinas’ cognitive psychology by means of a metaphor interpreted in terms of a major critic of Thomas’ doctrine of intelligible species. Moreover, the distinction between objective and formal illumination makes little sense without taking into account the medieval notion of the objective being of the cognitive object in the human mind, as opposed to the ‘subjectively’ received species. As we have seen, the same distinction or contrast between the ‘objective’ and the ‘subjective’ or ‘formal’ also played a crucial role in the psychologies of Achillini, Nifo and Zimara. Caietanus’ scruples with regard to a ‘formal’, physicalist type of illumination are bound up with Achillini’s conception of a ‘real’, unmediated presence of material forms in the intellectual soul, which also Zimara had rejected as an unacceptable alternative for the ‘objective’ presence of cognitive contents in the soul as based on ‘subjective’, physicalistically received mental representations.

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<sup>95</sup> *In primam partem*, 361v: “Et imo diligenter ac caute oportet attendere in hac re vocabula quid formaliter importent: ut formaliter loquamur.”

<sup>96</sup> *In de anima*, K5 va.

In his illumination doctrine Caietanus rejected any real influence of the agent intellect on the phantasms<sup>97</sup>. The 'objective' illumination unveils a quidditative essence, qualified as 'objectively' intelligible, and generates an intelligible species, which is 'formally' intelligible. What is the exact meaning of this peculiar construction? I think that the definition of the intelligible species as formally intelligible refers to its intrinsic ontological status, which as the end result of the mental act is *realiter* present in the intellectual soul. However, it inevitably follows that the intelligible species loses its primarily mediating function<sup>98</sup>. By qualifying the "quidditas" as actual intelligible, 'objectively' present in the phantasm, Caietanus probably wanted to express that the phantasm contains the intelligible, that is, the cognitively accessible kernel of sensible reality, but not *formaliter*. In fact, if it did so *formaliter*, then the phantasm would be a full-blown intelligible, and all intellectual capacities or mental operations would be just superfluous. The function of the 'objective' presence of the intelligible essence in sensory representations is that of grounding the objective reference of the (representations of) cognitive contents. For Caietanus, then, as for his colleagues such as Zimara, the 'objective-subjective' distinction served as a warrant for the coherence of a hierarchically conceived cognitive process. Caietanus abandoned naturalism with regard to the relation between the human mind and sensory information, but he held on to the 'formal' status of intelligible species in the mind as the only robust foundation for mental acts.

## 2.2. *Francesco Sylvester of Ferrara*

Like Caietanus, Francesco Sylvester of Ferrara was one of the spiritual fathers of the tradition of commentaries on Thomas<sup>99</sup>.

<sup>97</sup> This is judged negatively by Giacon, *La seconda scolastica*, vol. I, 104: the comparison of the light is said to have misled Caietanus, pushing him to the point of denying any real influence of the intellect on the phantasm.

<sup>98</sup> See already Peter Olivi and Gregory of Rimini for the intelligible species as essentially the effect of the mental act, remaining in soul; cf. ch. III, § 3.4, ch. IV, § 3.3.

<sup>99</sup> Franciscus De Silvestris Ferrariensis, 1474 Ferrara—1528 Rennes; 1488 entered the Dominican Order at the Convent of A. Maria degl'Angeli, Ferrara; 1498, lector at the convent of the order, Mantua; 1503, magister studentium at the con-

With regard to the origin of intelligible species, however, his views were largely reflections on a fundamental intuition of Giles of Rome on the relation between perceptual and cognitive faculties<sup>100</sup>.

In his commentary on the *Summa contra Gentiles*<sup>101</sup>, Ferrara characterized the intelligible species as “principium formale et elicativum” of the cognitive act. The cognitive act is not ‘terminated’ by the species, for otherwise the human soul, upon acquiring only a single species, would be condemned forever to know the same object<sup>102</sup>. Understood as the link between the mind and the external world, the species is connected to two realms or orders. It is intelligible according to its “modus essendi”, but “ex parte suae rationis” the species pertains to the material world. Of the material realm it expresses the universal aspects, but as an accident of the intellect it is a singular entity. Ferrara described this intermediate position of the species in the following terms: the species is a “forma naturalis” contained in the phantasms, and it is destined to become a form of the possible intellect<sup>103</sup>.

Ferrara, like Duns Scotus, based the need for species on the argument that the thing to be known must be presented to the intellect in an accessible form. Therefore, sensible reality must be proportionated to the intellect, because it is unthinkable that the intellect would proportionate itself to the things to be known<sup>104</sup>. The mediating function of the species is defended on ontological

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vent, Bologna; 1516, doctor theologiae, Bologna; 1517, completed his commentary on the *Summa Contra Gentiles*; from 1517 until death, he held various functions within his order.

<sup>100</sup> For an analysis of Giles’ position in this question, see ch. III, § 2.3.

<sup>101</sup> Franciscus de Sylvestris, *Commentaria in libros quatuor Contra Gentiles S. Thomae de Aquino*, ed. I. Sestili, 2 vols., Romae 1897-98.

<sup>102</sup> *In Contra Gentiles*, vol. I, “ad I.53”, 321: “Dicitur ex doctrina S. Thomae, praesertim *de pot.* q. 9, a. 5, quod licet species intelligibilis sit immaterialis et intellectui praesens aliquo modo, non tamen est in actu per modum objecti terminantis actum, nec per ipsam obiectum et actu praesens in esse obiectivo, sed tantum in habitu.” For the species as “quo”, see also vol. II, “ad II.75”, 376-78.

<sup>103</sup> *In Contra Gentiles*, vol. II, “ad II.49”, 192. See also *Quaestiones libri de anima quam subtilissimae simul & praeclarissimae decisiones*, Venetiis 1535, 28vb, where the intelligible species is defined as “qualitas repraesentativa rei intelligibilis”. For the doctrinal background, see *In II Sent.*, dist. 17, q. 2, a. 1, ad 3um (quoted in ch. II, § 3.5), and *De veritate*, q. 2, a. 5, ad 17um. See also the positions of Pomponazzi, Zimara and Caietan, discussed in this chapter.

<sup>104</sup> *In Contra Gentiles*, “ad I.75”, 379.

grounds: as an entity ("ens") the species cannot be identified with the "res repraesentata" in a material sense, but "formaliter" it matches the latter, for both are "eiusdem rationis"<sup>105</sup>.

Up to this point of his commentary Sylvester had simply been drawing conclusions that were already implicit, in one form or another, in the work of Thomas. Then his exposition takes an interesting turn, however: in a discussion with Caietanus, Ferrara turned to the problem of the illumination of sensible images by the agent intellect.

It is clear from the outset of the discussion that Ferrara's angle on the problem was diametrically opposed to that of Caietanus. As his opening thesis he stated that illumination in general regards only the medium, and not the visible as such or the colours. Now, the agent intellect's illumination of the phantasms can be understood in either of two ways: either as causing something in the phantasms, or:

ex sola causatione ipsum cum illo, reddendo ipsum a sua generatione virtuosiores et habiliorem ad huiusmodi causationem speciei.<sup>106</sup>

The inferior faculties are turned into more powerful capacities by the superior faculties. Because of the effective relationship between phantasy and intellect, based on their mutual origin in the same soul, the phantasms are endowed with capacities that transcend their status as physiologically embedded representations. Ferrara suggested that this interpretation, which clearly reminds of Giles of Rome, is "conformior" to Thomas. Like Caietanus, Ferrara's understanding of the relation between the various perceptual and cognitive faculties was couched in fundamentally Neoplatonic terms. Superior and inferior levels meet at their extreme ends, the top of the lower level touching the base of the next level up. Ferrara connected this idea with a certain view of the relation between phantasy and intellect, a view suggested earlier by Giles of Rome, and also endorsed by Vital du Four<sup>107</sup>. Without

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<sup>105</sup> *In Contra Gentiles*, "ad II.98", 620-621. The "formaliter", as used by Ferrara in this context, refers to the formal features of reality.

<sup>106</sup> *In Contra Gentiles*, "ad II.77", 403.

<sup>107</sup> See ch. III, § 2.3, and § 4.4; although it cannot be excluded, it is rather improbable that Sylvester was acquainted with Vital's work.

mentioning them by name, Ferrara borrowed from these predecessors the idea that an inferior perceptual faculty, rooted in the same soul as the superior cognitive capacities, may become “perfectior” or “virtuosior” by virtue of its contact with the latter. According to Ferrara, this peculiar relationship also explains why our phantasms are superior to those of the animals.

The illumination of the phantasms must be understood “radicaliter & fundamentaliter”, so Ferrara concluded from the spirit of *Summa theologiae*, I, q. 85, a. 1, ad 4<sup>108</sup>:

Unde, nihil est aliud intellectum agentem illuminare phantasmata, quam essentiam animae, ex hoc quod est intellectiva, et fundamentum intellectus agentis, producere secundum naturalem concomitantiam virtutem phantasiae talem, ut ab ipsa, phantasmata clara et habilia ab concausandum cum ipso intellectu possibili, provenire possint; et haec actio praecedat receptionem intellectus possibilis, sicut et ipsa formatio phantasmatis.<sup>109</sup>

The agent intellect does not superimpose or impress anything upon the phantasms; rather, by virtue of a participated similitude of the power of the agent intellect the phantasms are enabled to co-operate with the agent intellect<sup>110</sup>.

This ‘radical’ interpretation of the illumination clashes head-on with the “objective” illumination proposed by Caietanus. Preserving a certain latitude with respect to their common Master, Ferrara declared Caietanus’ opinion to be neither Thomistic nor true<sup>111</sup>. According to Sylvester of Ferrara, the “natura communis” can never ‘shine forth’ from the phantasms in the way suggested by Caietanus, since it is impossible that the phantasm contains or represents this general nature without singular features<sup>112</sup>. Moreover, the intellect cannot grasp the universal form in the singular phantasms, because universals are not “formaliter” present in

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<sup>108</sup> *In Contra Gentiles*, I.c., 403-404. *Summa theologiae*, q. 85, a. 1, ad 4, is quoted in ch. II, § 3.3.

<sup>109</sup> *In Contra Gentiles*, I.c., 404-405.

<sup>110</sup> See *Quaestiones libri de anima*, 30rb.

<sup>111</sup> *In Contra Gentiles*, I.c., 405; Sylvester did not mention Caietanus by name, but referred to ‘recent Thomists’.

<sup>112</sup> This observation contains an implicit critique of Henry of Ghent’s position. Notice that, like Duns Scotus, Ferrara regarded the cognitive object as “natura communis”; cf. ch. IV, § 1.1.

the sensible images (that is, according to their own being), but only “repraesentative”<sup>113</sup>.

In his analysis of Caietanus’ psychology, Sylvester grew sharply aware of a problem that was also noted in our discussion of Caietanus, namely, the problem of the relation between intelligible form and species. Following Caietanus’ argumentation step by step, one is inevitably drawn to the conclusion that the intelligible object, according to Caietanus, is veiled and ‘objectively’ present in the phantasms, and that it can be actualized before ‘formal’ intelligible species are generated<sup>114</sup>. The problem here is that any such construction of knowledge acquisition seriously undermines the possibility of a positive operation of the agent intellect. In fact, as Sylvester pointed out, lest the operation of the agent intellect is voided of all meaning, it must be conceived as causal and not only as ‘objective’.

The proper understanding of the actualization of phantasms should then be as follows. It is by virtue of their participation in the agent intellect that the phantasms are able to produce the intelligible species<sup>115</sup>. Or, as Ferrara put it in his commentary on *De anima*, the agent intellect guarantees the universality of our knowledge, while the phantasms guarantee the objective reference of the contents represented<sup>116</sup>.

According to Sylvester, the agent intellect’s “virtus activa” with regard to the phantasms, mentioned by Thomas in the *Summa contra Gentiles*, II.77, must be understood in terms of Aquinas’ theory of universal participation. This suggestion doubtless goes back to Giles of Rome, whose views were popular enough among many fifteenth-century Dominicans. Taking his lead from this suggestion, Sylvester wanted to re-evaluate abstraction as a real action. I think that, in this case at least, it is true to say that Sylvester, more than Caietanus, sincerely tried to solve the prob-

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<sup>113</sup> However, Caietanus did not speak of a universal contained in the phantasms, but of the intelligible as present ‘objectively’, not ‘formally’, in the sensory representations.

<sup>114</sup> *In Contra Gentiles*, I.c., 406-407.

<sup>115</sup> *In Contra Gentiles*, I.c., 408-409; cf. *In de anima*, 30rb-va.

<sup>116</sup> *In de anima*, 29ra.



lems inherited from Aquinas in the spirit of his thought<sup>117</sup>. The theory of the “radicatio” of perceptual and cognitive faculties, derived from Giles of Rome<sup>118</sup>, allowed him to skirt the perilous light metaphor with which Caietanus struggled. This does not mean that all questions regarding the mental processing of sensory information have now been solved. What is meant by the participation of phantasms in the agent intellect? Exactly how is the effective role or impact of sensory images modified by virtue of this participative relation? Moreover, how to understand the mysterious “virtus” that raises phantasms to a level which transcends them as such?

Seen from a broader perspective, Ferrara tried to explain how the agent intellect is able to extract coded information from sensory representational devices, instead of trying to explain, as his opponents did, how sensory representations themselves are elevated and hence able to move the possible intellect in such a fashion that their intelligible kernel may be received or grasped by the latter. In doing so, Sylvester certainly managed to keep the unity of our mental life intact, and, by the same token, to account for the objectivity of the contents of our mental acts. In a word, all cognitive phenomena are ‘saved’. Yet, it may be objected that he merely deferred the problems at hand, or shifted them to a different level: the purifying operation of the agent intellect is in fact only a postulate, which is ultimately left unexplained.

### 2.3. *Crisostomo Javelli*

Crisostomo Javelli is the last of this series of authoritative Italian Thomas commentators in the first half of the sixteenth century<sup>119</sup>.

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<sup>117</sup> For a different interpretation, see Giacon, *La seconda scolastica*, vol. I, 103-107.

<sup>118</sup> As we have seen in ch. III, § 4.4, it was also accepted by Vital du Four. For Giles’ influence on 15th-century Scholastic psychology, see ch. V, § 2.

<sup>119</sup> Chrysostomus Javelli, 1470/72 Canavese—ca. 1538 Bologna or Piacenza; 1495, received as student, Bologna; 1507, magister studentium at the convent of the Dominican Order there; 1516, magister theologiae there; 1518-21, regens together with Franciscus Sylvester there; from 1519 participated in the controversy caused by Pomponazzi’s *Tractatus de immortalitate animae*; published also on Plato’s ethics and politics. For more bio-bibliographical data, see M. Tavuzzi, “Chrysostomus Javelli, O.P. (ca. 1470-1538). A biobibliographical essay. Part I:

Besides a remarkable *Tractatus de animae humanae indeficientia, in quatruplici via scilicet Peripatetica, Academica, Naturali, & Christiana*<sup>120</sup>, and a commentary on the First Part of Aquinas' *Summa theologiae*<sup>121</sup>, he also wrote an *Epitome de anima*<sup>122</sup> and the *Quaestiones naturales super de anima (...) iuxta Thomae dogmata*<sup>123</sup>, in which he set forth Aristotle's psychology along Thomistic lines like his fifteenth-century predecessors<sup>124</sup>. The *Epitome* is a cursory survey of the main themes of Peripatetic psychology. With regard to the problem of intelligible species, its only interest lies in the fact that Javelli explicitly embraced in it the view that the intelligible species mediate our knowledge of substances<sup>125</sup>. In his *Quaestiones*, Javelli discussed a number of questions addressed earlier by Caietanus and Sylvester of Ferrara.

Javelli shared with his immediate predecessors the view that the agent intellect is unable to impress something on the phantasms. The illumination of sensory representations consists simply in the intellect's "assistencia & praesentia"<sup>126</sup>. In corroboration of this thesis Javelli referred not only to Hervaeus Natalis, John Baconthorpe and Capreolus, but also to Caietanus, whose presence

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Biography", in *Angelicum* 67(1990), 457-482, and "Part II: Bibliography", in *Angelicum* 68(1991), 109-121.

<sup>120</sup> Completed in 1533 and published in Venice 1536. For his attitude with respect to Aristotelian natural philosophy in general, and his conviction that "Philosophia Aristotelis et philosophia ut philosophia non convertuntur", see E. Gilson, "L'affaire", 51-52; Nardi, *L'Alessandrismo*, 142.

<sup>121</sup> See Grabmann, "Die Stellung des Kardinal Cajetan in der Geschichte des Thomismus und der Thomistenschule", 609: this commentary was composed in the same years as Caietanus' commentary, that is, during the first decades of the 16th century.

<sup>122</sup> *Epitome super libros Aristotelis de Anima*, in *Opera*, Lugduni 1580, 290-319.

<sup>123</sup> First published in Venice 1534; I have consulted the edition in *Opera*, 613-708.

<sup>124</sup> See, for example, Dominicus de Flandria and Lambertus de Monte, discussed in ch. V, § 2.5-6.

<sup>125</sup> See *Epitome*, 314b; Javelli did not give arguments for this thesis, however. For a discussion of this question in other authors, such as Richard of Middletown and Scaliger, see ch. III, § 4.2 and ch. IX, § 2.2, respectively.

<sup>126</sup> *Quaestiones naturales*, 688b and 690a-b. The origin of this doctrine of the impression of a quality on the phantasms by the agent intellect can be traced to shortly after Thomas; it was defended already by Jean de Goettingen, see Z. Kuksewicz, *De Siger de Brabant à Jacques de Plaisance*, 132.

in this mixed company would certainly have surprised him<sup>127</sup>. Javelli argued that the position of a “verè agens” does not necessarily imply an “imprimere”<sup>128</sup>. This would seem to indicate that he wanted to defend Caietanus against the criticisms of Sylvester of Ferrara, who blamed the former for reducing the agent intellect to a sterile presence void of any real activity. According to Javelli, the agent intellect’s pure presence must be understood as an abstraction, not involving any real separation, but rather a “repraesentatio unius non repraesentando aliud”<sup>129</sup>.

The same eclectic strategy was applied by Javelli to the issue of the generation of the intelligible species, and the latter’s relation to the “intelligibile in actu”. In accordance with Aquinas and Scotus, Javelli held that the species is produced by the agent intellect (“principaliter”) and by the phantasm as instrument. Possible objections against the idea that sensible phantasms are needed for the generation of an immaterial entity were met by Javelli with Aegidian views, probably borrowed from Sylvester of Ferrara. The phantasm, so Javelli argued, is aided by the presence of the agent intellect, which enables it to perform in a way that transcends its originally limited possibilities<sup>130</sup>. As regards the relation between the species and the actually intelligible, Javelli rejected not only the opinion of Baconthorpe, which is hardly

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<sup>127</sup> For Caietanus’ polemics with Capreolus, see above; the presence of Baconthorpe, who rejected the species, is even more puzzling. For discussion of the popularity of Baconthorpe during the Renaissance, see B. Nardi, *Sigieri di Brabante nel pensiero del Rinascimento italiano*, Roma 1945, 105f. Agostino Nifo praises him as interpreter of Averroes; cf. *Expositio in tres libros Aristotelis de anima*, Venetiis 1553, 159va; see also ch. IV, § 2.2. In the context of the species discussion, he was also mentioned by Gerolamo Girelli (ch. VII, § 4.1), Polo (ch. VIII, § 1.4), and Zabarella (ch. IX, § 1.1).

<sup>128</sup> *Quaestiones*, 688b: “Ad hoc dico quod non omne verè agens habet imprimere nisi agat actione media, qua aliquid perducitur sive imprimitur, sed sufficit quod ex sui praesentia confert id, cui fit praesens, & ponit aliquid ex tali praesentia quod ex se non posset.”

<sup>129</sup> *Quaestiones*, 689a. See also the conception of illumination as proposed by Godfrey of Fontaines (ch. III, § 3.3), which was to return in Radulphus Brito and which was also referred to by Caietanus.

<sup>130</sup> *Quaestiones*, 689a: “Secundò quia agens habet virtutem imperfectam, & tamen si ei adiungatur aliquid, per quod fiat vigorosius & virtuosius poterit in illum effectum, in quem per se non potest, sic est in proposito, (...)” However, see also Javelli’s misunderstanding of Jandun to whom, on p. 693a, he attributed a conception of the agent intellect as producing species and intellection.

surprising<sup>131</sup>, but also the doctrine of certain Thomists who held that the (grasp of the) actual intelligible is posterior to the (generation of the) intelligible species. Finally, with implicit reference to Caietanus, Javelli examined the theory of the illumination of the phantasm, according to which the illuminative activity of the intellect bears on the object, not on the medium. In this operation the agent intellect makes apparent what was previously invisible or disguised. Javelli recognized the danger involved in a similar construction, such that the actual intelligible form precedes the species, thus making the species redundant. To avert this danger he submitted the following alternative:

(...) ergo necesse est produci formam penitus immaterialem, quae constituat intellectum possibilem in actu primo & quae repraesentet obiectum universale, & quae uniat obiectum intellectui, & haec est species intelligibilis, (...).<sup>132</sup>

Subsequently, Javelli appealed to Thomas and Scotus, and defended the need for species against Henry of Ghent and Baconthorpe, arguing that a "phantasma illustratum" is insufficient ground for the intellectual act. Intellection requires that the intellect receives something that actualizes it<sup>133</sup>.

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<sup>131</sup> *Quaestiones*, 689a. It remains puzzling why he initially (see p. 688b) agreed with this medieval author on the operation of the agent intellect. For the popularity of Baconthorpe, see *supra*.

<sup>132</sup> *Quaestiones*, 689b.

<sup>133</sup> *Quaestiones*, 689b-690a: "Illud autem phantasma illustratum dicunt esse speciem intelligibilem expressam, id est per quam exprimitur & praesentatur intellectui possibili quidditas rei sine conditionibus materialibus, non autem dicunt impressam, quia negant tale phantasma recipi in intellectui possibili. (...) Impossibile est aliquid potentiale essentialiter fieri actu formaliter nisi per aliquod in eo receptum & intrinsecum, sicut impossibile est aliquid fieri actu calidum nisi per calorem sibi intrinsecum. (...) Est autem causaliter intelligere actuari specie, qua potest intellectus iam positus in actu primo exire in actum intelligendi." The identification of phantasm and expressed species, which returned in Zabarella and Piccolomini (cf. ch. IX, § 1.1 and 1.4), derives from a misconception of the positions of Thomas and of his opponents such as Henry of Ghent. Thomas distinguished between the intelligible species and the "intentio intellecta" or "verbum mentis", that is, the concept formed at the end of the cognitive process; cf. *Summa contra Gentiles*, I, c. 53, 444, and IV, c. 11, 3466. Henry of Ghent developed the notion of an illuminated phantasm as an alternative to the intelligible species. In his works, the expressed species stands for knowledge, more precisely for the Augustinian "notitia"; cf. ch. III, § 3.2. For the refutation of Henry, Javelli also referred to Capreolus, *In I Sententias*, d. 35, q. 1, and to Averroes, *In de anima*, III, co. 18; see p. 690a and 693a. In Caietanus, on the contrary, Capreolus was attacked, see *supra*.

In his analysis of the issue of intelligible species, Crisostomo Javelli sought to reconcile several contrasting interpretations; he made no pretence of giving an original solution to the problems handed down by the Angelic Doctor. Because of its tendency to discuss Aquinas' doctrine of species in a context similar to that used by Duns Scotus for analyzing that notion, Javelli's work foreshadowed in a sense the work of many later schoolmen<sup>134</sup>.

### § 3. INTERMEZZO

#### 3.1. *Exponents of German Humanism and Aristotelianism*

Philosophical works published in northern Europe during the Renaissance addressed psychological issues in a very broad context. The psychology and anthropology in German works of the sixteenth century were marked by a strongly Platonicizing tendency and a penchant for philosophical concordia<sup>135</sup>. Most of these works did not address the issue of the intelligible species at all<sup>136</sup>, or discussed it only in very modest terms. Still, an analysis of the main psychological texts of this period may improve our understanding of subsequent discussions at North-European universities in the seventeenth century; in particular, it may serve to set the background for the views on species developed by later authors such as Goclenius.

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<sup>134</sup> Many specifically Scotistic theses were not always endorsed, however. See, for example, the discussion regarding the causation of the "actus intelligendi", in *Quaestiones naturales*, on p. 692a-694a; on p. 694a, Scotus' position was rejected.

<sup>135</sup> See, for example, Magnus Hundt, *Anthropologicum de hominis dignitate, natura et proprietatibus* (...), Leipzig 1501, which was principally concerned with physiological and anatomical questions, however. For a similar display of erudition in the philosophy of the early Italian Renaissance, see the works of Vernia and Nifo, discussed in ch. VI, § 2.

<sup>136</sup> A significant example is Cornelius Agrippa, who did not touch on this issue in his analysis of the cognitive faculties, in *De occulta philosophia*, ed. K.A. Nowotny, Graz 1967 (reprint of the 1533 edition); see Liber I, cap. 61, and III, cap. 43-44. See also the absence of species in Liber II, cap. 60, where Agrippa dealt with the relation between God, the agent intellect, and the human soul. Also in chapter 52 of *De vanitate scientiarum*, which is partly devoted to Aristotle's psychology, he did not address this issue. See also his *Dialogus de homine*, ed. P. Zambelli, in *Rivista critica di storia della filosofia* 13(1958), 47-71.

## 3.1.1. John Eck

The commentary on *De anima* by John Eck is an eloquent example of impressive erudition<sup>137</sup>. The author pressed the need for intelligible species as being distinct from the intellection, and remaining in the mind after the mental act<sup>138</sup>. Well-informed about medieval discussions, Eck nearly exhaustively listed all defenders and opponents of the species doctrine<sup>139</sup>. For his commentary on *De anima* he used the translation by Argyropulos, who consequently translated *eidos* with “forma” instead of “species”. Apparently Eck did not find this choice of words particularly significant, interpreting the “forma” in terms of the traditional intelligible species. Furthermore, Eck believed that the species are “intentionaliter” present in the human soul, even before their effective production<sup>140</sup>.

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<sup>137</sup> Johannes Eck, 1486 Egg—1543 Ingolstadt; first studies in Rottenberg; 1498, matriculated at the University of Heidelberg; 1499, matriculated at the University of Tübingen; 1501 magister artium there; began study of theology at the University of Cologne; 1502-1510, studied theology in addition to mathematics and geography under Gregor Reisch (the author of the famous *Margarita philosophica*), and law under Ulrich Zasius, while teaching philosophy at the arts faculty of the University of Freiburg; 1510, doctor theologiae there; 1510-1543, professor of theology at the University of Ingolstadt; took part in the disputations and religious conferences after 1517. I have consulted the following edition: *Aristotelis Stagyrtae Philosophi De anima libri III Per Argyropilum (...) Adiectis Eckij Commentariis*, Augustae Vindelicorum 1520. Eck was acquainted with the Greek, Arab and many medieval commentators, and also quoted from the writings of Ficino, Bessarion, Pico della Mirandola, Lefèvre d'Étaples, and Nifo; quite surprisingly, he also invoked Cusanus; see 42rb.

<sup>138</sup> *In de anima*, 46vb.

<sup>139</sup> *In de anima*, 47r-b.

<sup>140</sup> *In de anima*, 42ra: “Anima intellectiva est locus formarum: recentiores & antiqui intelligunt hic per formas species intelligibiles: quas anima intentionaliter continet in essentia / ante earum productione.”

### 3.1.2. Philipp Melanchthon

In the *Liber de anima* Philipp Melanchthon<sup>141</sup> set forth an anthropology rather than a psychology<sup>142</sup>. His exposition, based primarily on the original Greek text, put strong emphasis on anatomical and physiological details, paying little attention to the intellectual functions of the soul. Melanchthon's interests in this treatise fall in roughly two domains: on the one hand there is a cluster of anatomic and physiological issues, where traditional authorities are supplemented with more recent sources, and on the other hand there is a cluster of theological problems. In addition to Aristotle, the Peripatetic tradition, and Plato, it is significant to note Melanchthon's interest in Stoicism<sup>143</sup>. Melanchthon's eclectic attitude in the psychology of cognition did not depend on any one of the traditional schools, and lead him to take relatively novel positions.

The importance of theology for Melanchthon's cognitive psychology is evident from the opening pages of his chapter on the rational powers of the human mind<sup>144</sup>. More emphatically than Eck, he affirmed the existence of innate principles and notions<sup>145</sup>.

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<sup>141</sup> Philippus Melanchthon, 1497 Bretten—1560 Wittenberg; 1509, studied at the University of Heidelberg; 1512-1518, studied at the University of Tübingen; 1514, magister artium there; began to lecture on classics, and in 1518 planned a Greek edition of Aristotle's works; 1518, professor of Greek at the University of Wittenberg; 1519 baccalaureus biblicus there; 1519-1560 professor of Greek and theology there.

<sup>142</sup> Philippus Melanchthon, *Liber de anima*, in *Opera quae supersunt omnia*, ed. C.G. Bretschneider, vol. XIII, Halis Saxon 1846; the first edition of this writing was published in Wittenberg, 1553. For a brief survey of the main themes, see Kessler, "The intellectual soul", 516-518. On Melanchthon as reformer of Aristotelian scholastic philosophy, see P. Petersen, *Geschichte der aristotelischen Philosophie im protestantischen Deutschland*, Stuttgart-Bad Cannstatt 1964 (2nd ed.), 19-107, 305; Schmitt, "The rise of the philosophical textbook", 797.

<sup>143</sup> See, for example, *Liber de anima*, 131; for discussion, cf. Petersen, *Geschichte der aristotelischen Philosophie im protestantischen Deutschland*, 84-85. Melanchthon's nativism seems to have been influenced by the Ciceronian interpretation of Stoic psychology; see *infra*.

<sup>144</sup> *Liber de anima*, 137: "Etsi penetrari acie humanae mentis rerum natura non potest, tamen vult Deus eam ab hominibus aspici, ut in ea consideremus testimonia de ipso, quae ostendunt et esse Deum, et qualis sit." The term "acies mentis" is found in Augustine; cf. *De trinitate*, XI, cap. 3 f. It also recurred in Descartes, see *Meditationes*, in *Oeuvres*, vol. VII, p. 51, and ch. XI, § 1.1.2.

<sup>145</sup> *Liber de anima*, 139: "Homo numerat, intelligit non tantum singularia, sed etiam universalia, habet noticias innatas, (...)"; p. 142: "(...) habens insitas quas-

This does not mean that he saw the mind as locked up in itself with its inborn notions, to be actualized upon accidental sensory stimulation. Rather, he saw the mind as open and directed towards the cognitive grasp of external reality. This much is also clear from his definition of "noticia":

Noticia est mentis actio, qua rem adspicit, quasi formam imaginem rei, quam cogitat. Nec aliud sunt imagines illae seu ideae, nisi actus intelligendi.<sup>146</sup>

Melanchthon emphasized the intrinsic coherence of mental acts; not only did he take the images and the ideas to be equivalent, but he also identified them with the intellectual act. These mental representations, which may indiscriminately be called images or ideas, ultimately refer as "umbrae" to their origin, which is seen as transcending the human mind<sup>147</sup>.

Elsewhere Melanchthon took a nominalist position: intuitive cognition has present things for its objects, while abstractive knowledge is grounded on the information stored in memory (which, incidentally, is conceived in physiological terms)<sup>148</sup>. By consequence, Melanchthon assigned intellectual abstraction not to the agent but to the possible intellect<sup>149</sup>. The former is seen as

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dam noticias nobiscum nascentes, habens et actum reflexum, (...)"; p. 144: "(...) aliquas noticias in mente humana, quae nobiscum natae sunt, ut numeros, ordinis et proportionum agnitionem, intellectum consequentiae in syllogismo. Item principia geometrica, physica et moralia." This nativism may have been influenced by Cicero's nativist interpretation of the Stoic common principles; cf. *Topica*, VII.30: "Notionem appello, quod Graeci tum *énnoian* tum *prólepsis*. Ea [sc. notio] est insita et animo praecepta cuiusque cognitio enodationis indigens". This nativism was based on the Stoic assimilation of the Epicurean *prolepsis* to notion, which is also found in the Greek-Latin edition of ps.-Plutarchus [=Aetius], *De placitis philosophorum*, IV.11, Florentiae 1750, 107. The Stoic appropriation of the *prolepsis* would be confirmed during the Renaissance by Justus Lipsius; cf. his *Manuductio ad Stoicam philosophiam*, in *Opera*, 4 vols., Wesel 1675, vol. IV, 706f.

<sup>146</sup> *Liber de anima*, 145.

<sup>147</sup> *Liber de anima*, 145: "Mirando autem consilio Deus noticias voluit esse imagines, quia in nobis umbras esse voluit significantes aliquid de ipso." For "umbra" as a principle of knowledge, similar to the intelligible species, see Giordano Bruno, examined in ch. VIII, § 3.3.

<sup>148</sup> *Liber de anima*, 145; see also Kessler, "The intellective soul", 517. An intellectual memory was also rejected by other contemporary authors, such as Buccaferrea (cf. § 3.2.1) and Girelli (§ 4.1).

<sup>149</sup> Already Alexander of Aphrodisias attributed the abstraction to the intellect "in habitu"; cf. P. Moraux, *Alexandre d'Aphrodise. Exégète de la noétique d'Aristote*, Liège-Paris 1942, 121f; and B. Bazán, "L'authenticité du *De intellectu*



“poeta” or “inventor”<sup>150</sup>, that is, as a creative principle that divides, composes and discovers, whereas the latter unfolds its abstractive activity on the basis of mnemonic contents already present in the soul<sup>151</sup>.

### 3.1.3. Vitus Amerbach and Hieronymus Wildenberg

Another example of the syncretistic trend in psychology are the *Quatuor libri de anima* of Vitus Amerbach<sup>152</sup>. Although the author’s professed purpose was to develop a treatise on the soul after Cicero, this work no less addressed the main issues in Aristotelian psychology. The ambivalence of this approach had its consequences for the context and outcome of the discussion<sup>153</sup>.

Like Melanchthon, Amerbach was averse to any complex hierarchy of sensible and intellectual powers and acts. Accordingly, he wanted to present the intelligible species in a way that brings out the fundamental unity of our mental life. His analysis echoed the traditional view that assimilates the species to the cognitive object, namely, to the formal element of sensible reality that can be grasped by the human mind:

Sunt autem species sensibiles accidentia, & affectiones entium, intelligibiles eorum formae, & naturae.<sup>154</sup>

The intellect is presumed to undergo or to receive these species. If it is understood as a light, however, the intellect receives exactly

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attribué à Alexandre d’Aphrodise”, in *Revue philosophique de Louvain* 71(1973), 468-487, on p. 480. See also Zabarella, examined in ch. IX, § 1.1. Also representatives of the Spanish Scholasticism would attribute the abstraction to the possible intellect. See, for instance, Franciscus Suarez, *Liber de anima*, in *Opera omnia*, ed. nova, ed. D.M. André, Parisiis 1856, vol. III, 728a.

<sup>150</sup> *Liber de anima*, 148.

<sup>151</sup> *Liber de anima*, 148: “Hunc ait abstrahere a phantasmatis. Id est, hic celeriter objecta confert, signa quaerit, ex signis causas aut effectus, collationes, allusiones, et inde eligit quod est aptissimum.” See also Petersen, *Geschichte der Aristotelischen Philosophie im Protestantischen Deutschland*, 83.

<sup>152</sup> Vitus Amerbach, †1557; studied philosophy, law, and theology in Wittenberg; joined Luther, but then on his return to Bavaria became a Catholic; was also active as professor in Ingolstadt. He would later be mentioned by Rudolphus Goclenius, *Lexicon philosophicum quo tamquam clave philosophiae fores aperiuntur*, Francofurti 1613, 1069a, s.v. “species”.

<sup>153</sup> Vitus Amerbach, *Quatuor libri de anima*, Argentorati 1542, p. 27.

<sup>154</sup> *De anima*, 181.

what it actualizes itself<sup>155</sup>. The intellect is thus seen as a constructing and receiving faculty that is essentially “simplex”<sup>156</sup>. Stressing the cohesion of the cognitive process, and tending to reduce the number of different moments and capacities involved in the mental act, this view led to the tacit assimilation of species and cognitive object.

A more traditional form of psychology is exemplified by the encyclopedic work of Wildenberg<sup>157</sup>. In a cursory survey of Aristotle’s natural philosophy, Wildenberg presented a conception of the species that generally respects the canons of mainstream tradition<sup>158</sup>. The intelligible species is seen as an intelligible, immaterial quality, abstracted by the agent intellect from the phantasm, and subsequently transmitted to the possible intellect<sup>159</sup>. The succinctness of Wildenberg’s phrasing of the issue foreshadowed that of many later Peripatetics and schoolmen, when the notion of intelligible species was no longer controversial.

### 3.1.4. Jacob Schegk and George Liebler

The commentary on *De anima* by Jacob Schegk<sup>160</sup> may be placed in the same line as Eck, Melanchthon, and Amerbach. The tower-

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<sup>155</sup> *De anima*, 193: “Atque adeo quoddam lumen est eius potentiae, quam intellectum, seu mentem vocamus, intellectus faciens, hoc est efficit in illa parte animae, ut species intelligibiles comprehendantur & actu sint, quae tantum potentia prius erant.”

<sup>156</sup> See *De anima*, pp. 222 and 231-32. For the polemics against the distinction between agent and possible intellect during the Middle Ages, see William of Auvergne (ch. II, § 1.4), Olivi (ch. III, § 3.4), and Durandus (ch. IV, § 2.1).

<sup>157</sup> Hieronymus von Wildenberg, 1464/5 Goldberg in Silesia—1558; 1496 matriculated at the University of Cologne; magister artium there; 1501, rector of a school, Culm; 1504, founded a school in Goldberg; 1511, matriculated for study of medicine at the University of Wittenberg; 1512, doctor medicinae there; 1513, returned to the school in Goldberg; 1515 “Stadtphysikus”, Thorn.

<sup>158</sup> Hieronymus Wildenberg, *Totius naturalis philosophiae in physicam Aristotelis Epitome*, Basileae 1544; this work contains an *Epitome in divi Aristotelis de anima libros*, on pp. 107-181.

<sup>159</sup> *Epitome de anima*, 166; see also p. 171, where the species is defined as “qualitas intelligibilis immaterialis, movens intellectum, cui allata imprimitur”.

<sup>160</sup> Jacob Schegk, 1511 Schorndorf—1587 Tübingen; 1540, published his translation of Alexander Aphrodisiensis’ *De mixtione* (Tübingen); 1542, published his *De principatu animae dialogus* (Tübingen); 1542 edited Aristotle’s *De anima* in Greek with excerpts from Simplicius’ commentary (Basel).

ing presence of Plato and Stoicism in this work determined both its terminology and its doctrinal context for analysing Aristotelian psychology<sup>161</sup>. In addition, Schegk frequently appealed to the revealed truths of Christian faith<sup>162</sup>.

A clear example of Schegk's Platonic background is found in his view of the intellectual apprehension:

Formas itaque et adumbratas in sensibus rerum species anima percipiens, arripiens videlicet secundam illam lineam effictarum è solidis rebus imaginum, cognoscendo et intelligendo eas mente elaborat, fugacibus innitens simulachris & inanibus, fieri nequit ut haec sit ipsius perfectissima apprehensio, (...) <sup>163</sup>

Departing from the "vestigia" and "umbrae", the human soul ascends toward adequate knowledge<sup>164</sup>. Subsequently, Schegk linked up this Platonic reading of Peripatetic cognitive psychology with a doctrine of the agent intellect that is essentially Stoic because of its explicit reference to the *hegemonikon*. As "mens efficiens" the latter produces intelligible species and ideas<sup>165</sup>. In consequence of this view, the intelligible species are understood as ideas, and thus, eventually, as cognitive objects<sup>166</sup>.

The Platonic assimilation of species and ideas became fashionable in the German Aristotelian school. It can also be found in the *Epitome philosophiae naturalis* by Liebler<sup>167</sup>, who determined the

<sup>161</sup> *Commentarius in Aristotelis de Anima libros tres*, Basileae 1546.

<sup>162</sup> *Commentarius in de anima*, 351, and 354.

<sup>163</sup> *Commentarius*, 348. For the concordia between Plato and Aristotle, see 349: Platonic dialectics is similar to Aristotelian first philosophy. See also p. 352: "(...) ita mens efficiens, species in phantasia impressas facit, ut sine materia in patientem traducantur mentem, quae pro eo ut est habitus & forma facit (...)"; and p. 352-3: "eadem verò a phantasia separatas quodammodo species & factas intelligibiles composita mens & patibilis tanquam pellucidum excipit & sentit, id est intelligit, sine materia species rerum in se impressas percipiens."

<sup>164</sup> *Commentarius*, 349. Cf. also Ficino's ideas regarding the start of the cognitive process, examined in ch. VI, § 1.3. In this context, it is interesting to note that the species was defined as "umbra"; see Roger Bacon, *De multiplicatione specierum*, I.i, 4-6. Giordano Bruno would assimilate the intelligible species to an ideal shadow; see ch. VIII, § 3.3.

<sup>165</sup> See *Commentarius*, 353, concerning the "mens efficiens" as "fabricans intelligibiles species atque ideas". For a discussion of the possible impact of Stoic cognitive psychology on the species doctrine, see ch. I, § 1.4.2.

<sup>166</sup> *Commentarius*, 357.

<sup>167</sup> Georgius Liebler, 1524 Neckartenzlingen—1600 Tübingen; studied philosophy under Schegk; 1544, magister artium in Tübingen; 1547, professor of Greek

species as “ideae materiatae”<sup>168</sup>. It is likely that Liebler was influenced by Schegk, as is also indicated by his use of noetic terminology<sup>169</sup>.

The cognitive psychology of the German authors examined here was marked by its generally eclectic and syncretistic nature. It characteristically incorporated the Scholastic doctrine of species in a broader frame of reference drawing on a wide variety of ancient and medieval sources. The authors discussed here did not subscribe to the views of any particular school or tradition. They marked a phase of conceptual transition with regard to the notion of mental representation, foreshadowing later, more critical elaborations of Aristotelian cognitive psychology by authors such as Giordano Bruno, as well as to the eventual substitution of the species doctrine by the modern theory of ideas in the seventeenth century.

### 3.2. *The intelligible species assimilated to notion and cognitive act*

Agostino Nifo's refutation of the intelligible species and his subsequent endorsement of it as “notio” had not gone unnoticed at the Italian studio's and centres of research in the first half of the sixteenth century<sup>170</sup>. In the work of Buccaferrea and Vimercato, for example, there is a distinct attitude in explaining the intellectual act and its content that can be regarded as a reaction to Nifo's arguments both for the redundancy and for the necessity of formal mediating principles in intellective cognition.

Some significant differences between Buccaferrea and Vimercato should be mentioned, however. Ludovico Buccaferrea believed that the intelligible species are superfluous. At the same

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and Latin at the University of Tübingen; 1553-1594, professor of physics in the chair of Schegk there.

<sup>168</sup> *Epitome philosophiae naturalis ex Aristotelis summi philosophi libris ita excerpta* (...), Basileae 1566 (2nd ed.), 262, and see ibidem: “(...) ita intellectus non actu intelligit, sed intelligere potest, ubi effectas ideas receperit: ac ista ratione etiam materiata quodammodo esse intelligitur.”

<sup>169</sup> See *Epitome philosophiae naturalis*, 264, where the agent intellect is described as “mens efficiens”.

<sup>170</sup> A. Poppi, by contrast, holds that the Pomponazzi—Zimara line was dominant; cf “La discussione”, 170.

time, however, he proposed a concept of “notio” that is remarkably similar to the repudiated concept of species. Buccaferrea’s terse remarks on the species as notion reveal the influence of Nifo’s view as set forth in his commentary on *De anima*. Nifo was ultimately forced to accept the species because of his departure from Averroes, and he argued that the only reasonable interpretation of the Scholastic doctrine of species was to identify “species” with “notio”<sup>171</sup>. Buccaferrea, however, who endorsed a moderate form of Averroism, was not driven by similar motives, nor did he mention Nifo in his discussion of the species. Francesco of Vimercato, on the other hand, who tended towards the same assimilation of species and notion, sustained an open and continuing polemic with Nifo in his psychological work. By contrast, the *De anima* commentary of Tignosio consistently avoided all polemics on this issue. Tignosio simply assimilated “forma”, “species”, and “actus”.

### 3.2.1. Ludovico Buccaferrea

In his commentary on *De anima*<sup>172</sup>, Ludovico Buccaferrea<sup>173</sup> displayed a profound knowledge of the tradition, citing not only the Greek and Arabic commentators, but also a large number of medieval authors<sup>174</sup>. Buccaferrea opted for a philologically sound

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<sup>171</sup> Recall that Nifo ‘corrected’ his view of species after changing his mind on the validity of Averroes’ interpretation of Peripatetic psychology.

<sup>172</sup> *Lectiones in tertium librum Aristotelis de Anima*, Venetiis 1566; this commentary was probably composed between 1535-42.

<sup>173</sup> Ludovico Buccaferrea, 1482 Bologna—1545 Bologna; studied philosophy and medicine under Achillini, among others, at the University of Bologna; in 1512-13 probably heard Pomponazzi there; 1516, doctor artium et medicinae there; 1515-1518, professor of logic there; 1518-1524 and 1527-1545, professor of philosophy there; 1525-27, professor of philosophy at the “Sapienza” in Rome; one of his pupils was J.C. Scaliger (cf. ch. IX, § 2.2). For discussion, see Nardi, *Saggi*, 320-322, 329, and 412. Buccaferrea’s psychological views were influential during the later Scholasticism; cf. Philippus Fabro, *Philosophia naturalis Jo. Duns Scoti*, Venetiis 1602, 510a; Bartholomaeus Mastrius & Bonaventura Bellutus, *Disputationes in Aristotelis libros De anima*, Venetiis 1671, 182b-183a, 405a; Ioannes Lalemandet, *Cursus philosophicus*, Lugduni 1656, 603b.

<sup>174</sup> See, for example, *Lectiones in III<sup>um</sup> de anima*, 132ra, for a discussion of Gregory of Rimini and John Capreolus.

form of Averroism<sup>175</sup>. The systematic import of the concept of “notio” for his thought is evident from the opening pages of his exposition on the IIIth book of *De anima*<sup>176</sup>.

Buccaferrea was not opposed to the species as such. Indeed, an entire section of his book was devoted to a discussion of the soul as “locus specierum”. Yet, the course of his analysis there makes it clear that he did not believe in a form of intellectual memory<sup>177</sup>, and that the idea of a “locus specierum” applies only to the inner senses<sup>178</sup>. Thus, the species stored in the soul are merely the product of the superior perceptual capacities. For this interpretation of the Aristotelian concept of memory, Buccaferrea sought support from Galenus and from traditional medico-anatomical speculations on the localisation of the inner senses.

Buccaferrea’s view on “notio” mirrored Averroes’ view of intellectual intention. Notions are eternal insofar as they are dependent on the agent intellect, and “novae” insofar as they are dependent on the phantasms<sup>179</sup>. Thus, they serve as a mediating link between the unique intellect and mankind<sup>180</sup>. The identification of “notio” and intelligible species involved contrasting accounts of the respective roles of the phantasms and the active mind in isolating the formal features of sensible reality and in the generation of the mental act. Initially, the main causal responsibility for the generation of notions is assigned to the phantasms:

phantasmata producunt notiones cum praesentia intellectus agentis. Erravit tamen Gaetanus, qui dixit, intellectum dare formam phantasmatis, (...).<sup>181</sup>

At this stage, the role of the agent intellect in the production of notions would seem to be only marginal. Earlier, however,

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<sup>175</sup> See *Lectiones*, 122ra-b, where he departed from Averroes’ reading of Themistius.

<sup>176</sup> *Lectiones*, 121rb: the intellect is “capax notionum”; 122rb: the “notio” connects the possible and the agent intellects.

<sup>177</sup> *Lectiones*, 135ra.

<sup>178</sup> *Lectiones*, 127rb-128rb.

<sup>179</sup> *Lectiones*, 122rb.

<sup>180</sup> *Lectiones*, 125rab.

<sup>181</sup> *Lectiones*, 124vb. The description of the phantasm as “imago” or “simulachrum” may be due to the influence of the terminology of Ficinian Neoplatonism; see pp. 121rb and 133ra. The “Gaetanus” mentioned in this quotation is Gaetano of Thiene, see ch. V, § 3.2.

Buccaferrea assigned to this intellect the abstraction of universal forms<sup>182</sup>. This construction strikes one as rather problematic: intuitively, one is inclined to think of the (unconscious) abstraction of forms as preceding and grounding the generation of (psychological) notions. Indeed, the distinction between notion and form is not always very clear in Buccaferrea's analysis of knowledge acquisition<sup>183</sup>. At a later stage he reconsidered the role of the agent intellect in the generation of mental representations.

Buccaferrea was well aware of the traditional difficulties impinging on the production of formal cognitive principles, and on the view that mental acts depend on phantasms. For example, he was keen to point out that the concept of "notio", as he intended it, was not subject to the third-man argument<sup>184</sup>. In the previous chapter we have seen that this is the argument that Nifo thought to be fatal for the traditional doctrine of species<sup>185</sup>. This is more proof of the fact that Buccaferrea's underlying strategy was to substitute the species for a concept of "notio" in Nifo's style, as is also confirmed by his analysis of man's self-knowledge, where he observed that the intellect is intelligible on the basis of acquired notions<sup>186</sup>.

More details of Buccaferrea's cognitive psychology may be gathered from the passage where he explicitly addressed the issue of intelligible species. Here Buccaferrea radically reconsidered the role of the phantasm in the generation of human knowledge, assigning now to the agent intellect the production of notions, which

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<sup>182</sup> *Lectiones*, 122rb: "quia intellectus separat formas lapidis, & facit universales, (...)." For a similar construction, see Paul of Venice, *In de anima*, 137rb; quoted above in § 2.1.

<sup>183</sup> Cf., for example, *Lectiones*, 131rb: "intellectus noster est intellectus potentia ad suscipiendas omnes notiones"; and p. 142vb: the soul receives "omnes rerum formas".

<sup>184</sup> *Lectiones*, 127rab: "Ex quo ergo non est una simpliciter, non sequitur si Socrates apprehendit, quod Plato apprehendat, etiam si diceremus, quod talis notio sit simpliciter multiplicata, sequitur quod in notione erit processus in infinitum, quia cum notiones sint abstractae ab individuis, & differant numero tales notiones, & a duabus numero abstractis, potest alia notio communis, & sic processus in infinitum, quod est absurdum." This question is connected to the numerical paradox used by Nifo against the species doctrine.

<sup>185</sup> Cf. his *De intellectu*, 43va-44ra, discussed in ch. VI, § 3.2.

<sup>186</sup> *Lectiones*, 131rb: "(...) quia intellectus noster est separata a materia & tamen non est intelligibilis ex sui natura, nisi ex notionibus sensibilibus (...)." See also p. 155rb.

are not to be distinguished from cognitive acts. At this point, the Latin tradition that assumed the need for mediating intelligible species is definitively rejected. Buccaferrea adhered instead to the Greek tradition:

Est tertia dubitatio qualis sit illa necessitas intellectus agentis, fere omnes Latini ponunt species intelligibiles distinctas specie ab actu intelligendi, et dicunt quod primo producitur species intelligibilis deinde intellectio (...) Graeci autem non patiuntur hanc difficultatem, quia dicunt quod species intelligibiles non distinguuntur ab ipsa intellectione, & vocant species intelligibiles respectu obiecti vocatur intellectus respectu intellectus potentiae, & mihi placet haec opinio, quia si essent tales species reservatae in intellectu in ipsa esset memoria, quod tamen negavit Aristoteles. (...) ita dico ad argumentum, quod operatio intellectus agentis est producere illas notiones in intellectu potentiae, quia eadem est species intelligibilis & ipsa notio.<sup>187</sup>

Intelligible species are just notions, that is, actual mental representations generated by the agent intellect. Unlike Nifo, Buccaferrea drew the correct conclusions from Aristotle's Greek text, disposing of intellectual memory and identifying intellectual representations with mental acts<sup>188</sup>.

### 3.2.2. Francesco of Vimercato, Nicola Tignosio and Bassiano Lando

The psychological work of Francesco of Vimercato<sup>189</sup> shows impressive erudition<sup>190</sup>. In addition to the well-known

<sup>187</sup> *Lectiones*, 135ra. For the production of notions by the agent intellect, see also p. 138va. Buccaferrea also referred to Apollinare Offredi.

<sup>188</sup> Nifo, by contrast, defended his departure from Averroes' interpretation by pointing to his own knowledge of the Greek language. By this token he was led to accept the exact contrary of Averroes' learnings. He thus felt compelled to accept the species doctrine because it conflicted with Averroes' interpretation of Aristotle. See ch. VI, § 3.2.

<sup>189</sup> Francesco of Vicomercato, 1512 Milan—1571 Milan; studied philosophy in Bologna, Pavia, and Padua; doctor philosophiae; 1540, admitted to the French nation at the University of Paris; taught dialectics at the Collège du Plessis there; 1542-1561, professor of Greek and Latin philosophy at the Collège Royal there; 1561, professor of philosophy at the newly founded University of Mondovì (councillor of the duke of Savoye). His name would reappear during the Second Scholasticism; cf. Collegium Conimbricense, *Commentarii in tres libros De anima Aristotelis Stagiritae*, Venetiis 1616, 350a; Ioannes Poncius, *Integer Philosophiae cursus ad mentem Scoti*, Pars III, Romae 1643, 488b. For more bio-bibliographical data see N.W. Gilbert, "Francesco Vimercato of Milan: a bio-bibliography", in



representatives of the Peripatetic tradition, his analysis involved the Presocratics, Plato, Cicero, Macrobius, and many others<sup>191</sup>. It is interesting to note in this context that he even knew the Greek commentator Theodorus Metochita<sup>192</sup>. In his commentary on the third book of *De anima*, Vimercato's discussion concentrated mainly on the Aristotelian tradition of the past. Discussion of contemporary authors was restricted almost exclusively to Nifo, main target of his criticism<sup>193</sup>. The frame of reference is slightly broader in *De anima rationali peripatetica disceptatio*, where Pomponazzi, Achillini, Giovanni Pico, his nephew Gianfrancesco, Melanchthon, and others were included in the discussion<sup>194</sup>. Generally speaking, Vimercato's psychological work was dominated by the philological reading of the great masters of the past. As a result of this he was only marginally interested in problems such as the species dispute, which arose only in medieval cognitive psychology. Yet, from his scant remarks on the subject we may devise that he (like Buccaferrea) followed in effect the tracks of the loathed Suessanus.

In his commentary on *De anima* III, Vimercato saw no need to explicitly reject the intelligible species. He intimated, however, that his position is different from the mainstream tradition. Initially he did not use the term "intelligible species" at all, mentioning only species *of* intelligibles<sup>195</sup>. This seems to betray a cer-

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*Studies in the Renaissance* 12(1965), 188-217. For discussion, see Nardi, *Saggi*, 404-410. Vimercato is also praised in recent studies on Aristotle; cf. W.D. Ross, *Aristotle De Anima*, edited with introduction and commentary, Oxford 1961, who cites him on p. 297.

<sup>190</sup> Franciscus Vimercatus, *De anima rationali peripatetica disceptatio*, Parisiis 1543; idem, *Commentarii in librum III De anima*, Paris 1543; I have consulted both these works in the reprints published in Venice 1573-74.

<sup>191</sup> See *In III de anima*, 3b.

<sup>192</sup> *Disceptatio*, 36b. Theodorus Metochita was the author of a *Paraphrasis in libros III de anima Aristotelis*, printed three times in a Latin edition during the Renaissance, Basel (1559 and 1562), and Ravenna (1614). For discussion, see M.C. Vitali, "Théodore Métochite et sa *Paraphrasis in libros III de anima Aristotelis*", in *L'homme et son univers au Moyen Age*, Louvain-Paris 1960, 273-278; Ch.B. Schmitt, "The rediscovery of ancient skepticism in modern times", in *The Skeptical Tradition*, ed. M. Burnyeat, Berkeley-London 1983, 225-251, on p. 235.

<sup>193</sup> See, for example, *In de anima*, 8a, 9a, 18b; and also *Disceptatio*, 50a.

<sup>194</sup> *Disceptatio*, 36b-37b.

<sup>195</sup> *In de anima*, 8b, and 9a.

tain Platonic tendency<sup>196</sup>. Yet, from what follows we may gather that he was not a Platonist. Like Buccaferrea, Vimercato believed that the doctrine of the soul as “locus formarum” applies only to the inner senses, which are rooted in the brain<sup>197</sup>. Accordingly, the terminology of the species has no use in describing the cognitive assimilation of external reality by the intellect. Vimercato definitely opted for the concept of “notio”. Still, the latter is grounded in a “similitudo”:

Notio enim lapidis quae intelligit, nihil est, praeter lapidis similitudinem quae cum intellectu existat, intellectum ipsum lapidi similem effici necesse est, quare cum omnium notiones intellectus habere natus sit, omnia similitudine quadam effici potest.<sup>198</sup>

In this passage it remains unclear whether Vimercato maintained that the generation of notions is conditioned by similitudes, or whether the similitude itself should already be seen as a notion. Joining ranks with Themistius, Vimercato subsequently changed his perspective, advancing the claim that the intellect is nothing but the “plane intelligibilia seu notiones”<sup>199</sup>. The agreement with Themistius once more seems to point to a Platonic strand in Vimercato’s thought. In *De anima rationali peripatetica disceptatio*, however, the existence of an intellectual memory is explicitly denied<sup>200</sup>.

In relative isolation from the above authors stands the *De anima* commentary by Nicola Tignosio<sup>201</sup>, a strongly syncretizing work<sup>202</sup>. The analytical strategy adopted by the author was apparently aimed more at avoiding problems than at trying to solve them. The penchant for harmony led him to explore the possibility of a general consensus between the main traditional schools. As a matter of fact, Tignosio claimed that the conceptual framework of

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<sup>196</sup> The expression “species intelligibilium” may suggest, in fact, that the species are caused by, or dependent on, (separate) intelligibles.

<sup>197</sup> *In de anima*, 11b; like Buccaferrea, he cites Galen, too.

<sup>198</sup> *In de anima*, 12a.

<sup>199</sup> *In de anima*, 12a.

<sup>200</sup> *Disceptatio*, 46a, and 49b.

<sup>201</sup> Nicola Tignosio, fl. XVI century.

<sup>202</sup> Nicolaus Tignosius, *In libros Aristotelis de anima commentarii*, Florentii 1551.

Peripatetic psychology, as developed by John of Jandun, Paul of Venice, and Gaetano of Thiene, could more or less effortlessly assimilate elements from other traditions and schools<sup>203</sup>. Once this strategy has been established, it is not surprising to find that Tignosio took the definitions of the human soul as “locus formarum” and as “locus specierum” to be downright equivalent<sup>204</sup>. The same syncretizing attitude is found in his view on the three-fold operation of the agent intellect:

Omnes tamen isti concludunt quod intellectus agens sit animae coniuncta potentia activa habens triplicem activitatem. Prima est, quod ipse concurrat in cognitione intuitiva cum obiecto per se sine aliquo praevio, & cum illo tamen cognitionem concausat. Secundo, quia concausat id quod cum eo concurrat ad causandum actum intelligendi, scilicet speciem intelligibilem. Tertio, quia imprimit in intellectum possibilem, & per hoc dicitur intellectus agens, quoniam exprimere est quoddam agere, & propter hoc ei non attribuitur imperfectio, quoniam efficere dicit perfectionem.<sup>205</sup>

Here the intelligible species, which had initially been defined as “vices obiecti”, are simply identified with the act of human intellect<sup>206</sup>.

Buccaferrea and Vimercato were not isolated or insignificant figures in the history of Peripatetic psychology. Like Nifo, they represented a new way of understanding the formal aspects of the cognitive act. This new approach may also be found in the work of other authors. Bassiano Landus<sup>207</sup>, for example, who taught philosophy at the university of Padua during the 40’s, submitted in his commentary on *De anima* the claim that the agent intellect gener-

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<sup>203</sup> For example, he also referred to Boethius on p. 336, and to Gilbert of Porretanus on p. 335.

<sup>204</sup> For an interchangeable use of form and species, see also Agostino Faba, *In tres Aristotelis libros De anima praeclarissima commentaria*. Nunc primum in lucem edita Ioachimo Peronio Traduttore, Augustae Taurinorum 1597, discussed in ch. IX, § 1.4.

<sup>205</sup> *In de anima*, 383. For a similarly syncretistic noetics, see Paul of Venice, examined in ch. V, § 3.1.

<sup>206</sup> *In de anima*, 343, and 344.

<sup>207</sup> Bassiano Lando, from Piacenza, † 1563 Padua; taught humanities and Greek in Reggio and then in Bologna; studied philosophy and medicine at the University of Padua; 1542, doctor artium et medicinae there; 1544, professor extraordinarius of philosophy at the University there; 1547, professor of medicine there. According to Nardi, *Saggi*, 372, Landus belonged to the Alexandrists.

ates *noemata*, which implicitly refers to a position developed by the above authors<sup>208</sup>.

Interpreting the intelligible species as notion, the Italians discussed in this section in a sense anticipated the new seventeenth-century concept of idea, like German authors of the previous section. This modern concept of idea was conceived not only as the most generic indication for mental representation (Locke), but also as a mental act with representational content (Descartes, Arnauld), or as a cognitive expression of external objects by the soul (Leibniz).

#### § 4. OPPOSITION RENEWED

Around 1550 a second attack on the intelligible species was set in by Girolamo Girelli and Simone Porzio, different from that of earlier sixteenth-century critics such as Nifo, and different from one another in philosophical perspective. Girelli's position was unique in its attempt to defend Averroist heritage in terms of a conceptual framework dominated largely by the medieval Franciscan opposition against species. Indeed, Girelli criticized Zimara for misunderstanding the essence of Averroist cognitive psychology. Porzio's position was different from both Girelli's and that of earlier critics, addressing the species issue from an essentially Alexandrist point of view. Later, Giulio Castellani was to take a similar position<sup>209</sup>.

##### 4.1. *Girolamo Girelli*

Between 1554 and 1560, the Franciscan theologian Girolamo Girelli, who from 1539 onward had held the chair in "via Scoti" at the University of Padua<sup>210</sup>, composed his treatise *Adversus quaes-*

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<sup>208</sup> Bassianus Landus, *In III libros De anima expositio*, Venetiis 1569. On p. 44rb, he *de facto* assimilated the intelligible species to the *noemata*: "Ita intellectus dividitur in intellectum potestate, quando nondum accipit species intelligibiles, nec patitur ab agente; & in intellectum actu, quando recipit & patitur ab agente, qui tanquam opifex fabricat *noemata* ex phantasmatis."

<sup>209</sup> This author will be examined in chapter VIII, § 2.1.

<sup>210</sup> Hieronymus Girelli, 1490 Brescia—1573 Brescia; a Franciscan author, who taught philosophy in Bologna and Pavia, and theology in Padua.

*tionem Marci Antonii Zimarae de speciebus intelligibilibus ad mentem antiquorum Averrois praesertim*. The work was a thorough examination of Zimara's question on intelligible species, eventually refuting his major arguments in favour of the species doctrine<sup>211</sup>. The treatise constituted a substantial departure from the theoretical tradition of Franciscans of those days. In sharp contrast to his friar Antonio Trombetta, for example, Girelli tended to associate himself with historical attacks on the species by medieval friars like Peter Olivi and William of Ockham. Interestingly, Girelli was influenced not only by Averroes, but also by Alexander of Aphrodisias, for whom he had an unmistakable esteem. This appreciation of Alexander is a clear sign of the fact that the philosophical climate at that time was changing<sup>212</sup>.

Girelli started his discussion with some preliminary remarks. Any adequate account of intelligible species, so he observed, should meet four requirements. First, it should be based on an acceptable definition of species, for which Girelli proposed the following:

qualitas quaedam spiritualis habens esse fixum & permanens in intellectu possibili formaliter, sive (ut aiunt) subiective (...) praecedensque actuale cognitionem obiecti.<sup>213</sup>

Secondly, it should account for the potentiality of the possible intellect. More to the point, it should determine whether the view of Averroes or that of Alexander is to be accepted<sup>214</sup>. Thirdly, and closely connected to the first point, it should determine the ontological status of the species, making clear whether it is "accidens in subiecto" or "quidditas rei"<sup>215</sup>. Finally, it should be able to explain Averroes' remark in *Destructio destructionis*, III, solutio 18, where it is said that the forms of sensible reality are present in the intellect in a different degree, or in a more perfect way<sup>216</sup>.

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<sup>211</sup> Published in Venice in 1561; cf. Poppi, "La discussione", 170.

<sup>212</sup> This may be a consequence of Pomponazzi's influence; other leading representatives of the Alexandrist school in this period were Porzio and Castellani; at the end of this century, also Zabarella would endorse Alexandrist views.

<sup>213</sup> *Tractatus*, 20r.

<sup>214</sup> *Tractatus*, 20r.

<sup>215</sup> *Tractatus*, 20v.

<sup>216</sup> *Tractatus*, 20v; cf. Averroes, *Destructio destructionis*, disp. III, solutio 18. This passage was already discussed by Nifo in his commentary on the *Destructio*,

After these introductory remarks, Girelli turned to Alexander to find support for his identification of the intelligible species with the “quidditas” or matterless form that is actually grasped by the human mind<sup>217</sup>. According to Girelli, this interpretation is highly recommendable and deserves serious consideration, as it is supported by the epistemologies of Themistius and Averroes<sup>218</sup>. With regard to the latter, Girelli pointed out that the Latin version of his commentary consistently uses “forma” and never mentions “species”. It is therefore certainly incorrect to assume, as Zimara did, that Averroes intended to refer to “species” when mentioning “forms”<sup>219</sup>.

With implicit reference to the genuine Aristotelian realism of authors such as Achillini and Bacilieri, Girelli established that sensible forms have a twofold being, namely, in matter and in the human intellect. Insofar as present in the intellect, the sensible form is “quidditas rei”, and not any alleged “species impressa”. Furthermore, there is no evidence for the claim that the known form has an “esse fixum & permanens” in the human mind, as Zimara assumed. Like some of the authors discussed in the previous section, Girelli ruled out the existence of an intellectual memory, which was without doubt a courageous claim for a theologian to make<sup>220</sup>.

Continuing his polemics with Zimara, Girelli submitted that the human intellect does not receive the forms “formaliter” but only “comprehensive & perfective”, that is, in the same way the celes-

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p. 86ra. See also Averroes, *Destructio destructionum philosophiae Algazelis*, in the Latin Version of Calo Calonymus, ed. B.H. Zedler, Wisconsin 1961, 199: “Et, cum sic fuerint, formae quidem entium sensibilium habent gradus in esse. Et vilius est esse earum in materiis; deinde esse earum in intellectu humano est dignius, quam esse earum in materiis”.

<sup>217</sup> *Tractatus*, 20v-21r.

<sup>218</sup> *Tractatus*, 21r.

<sup>219</sup> *Tractatus*, 21r-v; Girelli was obviously not being completely fair, for it is hard to imagine that he was not acquainted with the Latin translation of Themistius *De anima*-paraphrase, where the term species frequently occurs; see ch. I, § 2 and 4.3.

<sup>220</sup> *Tractatus*, 22r; he looked for support for this thesis in Averroes’ commentary on *te*. 39; cf. *In de anima*, 505: “(...) necesse est ut formae sint existentes in intellectu secundum velocitatem et rem velocis transmutationis non fixam (...)”. He rejected John of Jandun’s opinion on this topic, see 22v.

tial intelligences receive the abstract forms<sup>221</sup>. In fact, it is inconceivable that an intellectual substance should receive accidents, even if a distinction is made between the possible intellect as such, and the same regarded in connection to our sphere<sup>222</sup>. Girelli showed that the argument that the possible intellect may receive accidents only insofar as it is connected to mankind (which was used in defence of the species doctrine by some Averroists), leads to contradictory conclusions with respect to the “ratio recipiendi”. For, assuming that the received accidental species pertain to bodily reality, how should it then be possible to maintain that the species as “forma spiritualis” would be able to exist independent of the body<sup>223</sup>?

Girelli could now be more explicit about his claim, initially introduced on the authority of Alexander, that the sensible form known by the intellect should be seen as “comprehensio actualis”, and not as “accidens inhaerens”. He was obviously not opposed to the notion of mental representation as such, as is also clear from his view of the known forms as being present in an “esse intellectuali”, that is, as “cognitum in cognito”. On the basis of these considerations, Girelli apparently wanted to distinguish more clearly between the intellect’s ‘comprehensive’ and ‘perfective’ receptivity, as opposed to the formal or physicalist “inhaerentia”<sup>224</sup>.

Keen on presenting himself as a genuine Aristotelian, Girelli strenuously defended the thesis that all human perfections, including intellectual apprehension, must flow from ‘incoming’ intelligible forms, since innatism is ruled out by assumption. To explain the characteristic nature of the mind’s “perfectio”, which he identified with the “forma intellecta”, Girelli repeatedly stressed that cognitive contents are present in the mind as in an ‘intellectual’, ‘universal’ or ‘intentional’ being:

Eadem quoque forma ut est in anima, dicitur comprehensio actualis. Ad questionem ergo quando quaeritur an cognitio actualis sit accidens inherens intellectui realiter, respondeo quod non: quoniam forma in esse universali habens esse in intellectu possibili ut cogni-

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<sup>221</sup> See, however, Zimara’s stressing the subjective reception of species as condition for the objective reception of the forms or quidditative essences.

<sup>222</sup> *Tractatus*, 23r.

<sup>223</sup> *Tractatus*, 23v; cf. Poppi, “La discussione”, 175.

<sup>224</sup> *Tractatus*, 24r.

tum in cognoscente dicitur comprehensio, quae non distinguitur re a re comprehensa; eadem enim quidditas ut habet esse intellectuale dicitur intellectus quia forma abstracta, & dicitur comprehensio sive actualis cognitio in quantum est in intellectu possibili, per modum formae in esse intentionali, & non in esse reali.<sup>225</sup>

Girelli had a very precise purpose for introducing these familiar but still fairly singular forms of being: he needed them to detach the mental act from the physicalist framework of authors such as Zimara. The various characterizations of mental being, in Girelli's work as well in that of medieval authors or in Nifo's, serve to determine the status of cognitive contents or known forms while avoiding the physicalist-style inherence of an accident in a substance, on the model of 'real' beings. There is also a risk involved, however: the terminological proliferation of being seems only to defer the problem of the relation between mental act and content, not to solve it. This danger was negatively confirmed by Girelli when he conceived of the intellection as an intentional act, and even went so far as to define it, quite problematically, as an "accidens intentionale"<sup>226</sup>. However, even if one accepts the hazy world of intentional, universal and intellectual being, the problem of concept acquisition has still not been solved, for Girelli's attempted solution simply begs the question.

Having set out his position in broad outline, Girelli tried to consolidate it with reference to Henry of Ghent and John Baconthorpe (called "Joan. Anglicus")<sup>227</sup>. In this context he also rejected the species theory of Duns Scotus<sup>228</sup>. The notion of the soul as "locus" appeared to yield another argument against the traditional species theory, considering that no mediation is required between "locus" and "locatum". Finally, Girelli pointed out that Jandun tried to solve the "rationes" of Baconthorpe against impressed species, but that he did not succeed<sup>229</sup>.

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<sup>225</sup> *Tractatus*, 24r.

<sup>226</sup> See *Tractatus*, 24v-25r.

<sup>227</sup> *Tractatus*, 25r-26v: he refers to Henry's *Quodlibetum* IV, q. 7-8, and to Baconthorpe's *In II Sent.*, d. 6, a. 3. See also ch. III, § 3.2, and IV, § 2.2.

<sup>228</sup> *Tractatus*, 26r: if there were any species prior to the intellectual act, then the object would be assimilated before the intellection, or the possible intellect would lose its essential potentiality.

<sup>229</sup> *Tractatus*, 26r-v.



Girelli then turned to two theses from Achillini regarding the presence of cognitive contents in the possible intellect<sup>230</sup>. Rephrasing his rejection of really inherent intellectual accidents, Girelli concluded that the form of the stone present in the soul is nothing but its intellection and apprehension<sup>231</sup>. Thus, the intellect does not receive any species but only “quidditates”, and those are not grasped “subiective” but only “obiective”<sup>232</sup>. These remarks by Girelli, which clearly refer to the well-known dispute on the presence of mental representations and/or cognitive objects in the mind, effectively prepared Girelli’s refutation of the first of Zimara’s arguments in favour of species, namely, (1) that regarding the intellect as receiving accidents<sup>233</sup>. Girelli then turned to the remaining two of Zimara’s arguments, namely, (2) that the agent intellect would be idle without the abstraction of intelligible species, and (3) that objective reception without subjective reception is impossible<sup>234</sup>.

In his reply to the second argument, Girelli argued against Zimara and Scotus that the operation of the agent intellect terminates with the universal form that is actually grasped by the possible intellect<sup>235</sup>. With regard to the third argument Girelli objected that the problem of the location and storage of intelligible forms, as formulated by Zimara, is just artificial and futile, since sensible forms are not transferred by the intellect from one subject to the other, but from one order to another<sup>236</sup>.

After these restrictions on the parallel between the receptivity of the possible intellect and that of matter, Girelli arrived at what is arguably the most peculiar point of his treatise: his attempt to

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<sup>230</sup> *Tractatus*, 26v-27r: (1) the intelligible species must be the ‘diminished’ being of things in the intellect, and (2) no accidents inhere ‘really’ in the intellect. See Achillini, *Quolibeta*, III, dub. 3, in finem; and for discussion, cf. Poppi, “La discussione”, 178, note 1. See also the analysis of Zimara’s misconceptions on this issue on p. 27r.

<sup>231</sup> *Tractatus*, 27r-v.

<sup>232</sup> Notice, however, that the ‘objective’ presence of the sensible essences in the mind was also accepted by Zimara.

<sup>233</sup> *Tractatus*, 23r, refuted on p. 29r.

<sup>234</sup> *Tractatus*, 27v-29v.

<sup>235</sup> *Tractatus*, 30r-33v: the operation of the agent intellect is a mere “eductio de potentia ad actum”, not a kind of imprinting, for there exists nothing in which to impress its possible effects.

<sup>236</sup> *Tractatus*, 33v.

claim support from Thomas and Scotus for his rejection of intelligible species. Well aware of the precariousness of this project, he sought to sow discord in the “*communis opinio*” regarding the two “*principes nostri*”. Actually, so Girelli claimed, the two past masters had endorsed the intelligible species, as being preserved in memory, only on theological grounds, because the Holy Scripture in various places suggests the existence of an intellectual memory<sup>237</sup>. Girelli saw no reason here to reconsider his earlier conclusions, and, resuming his critical analysis of Zimara, repeated that the need for species cannot be defended on Averroistic grounds<sup>238</sup>.

In his examination of Girelli’s position, Poppi comes to the conclusion that Girelli (who was not acquainted with Pomponazzi’s question) found in Zimara an adversary who was relatively easy to refute, considering that the latter’s defence of the species doctrine was much weaker than Pomponazzi’s. Moreover, according to Poppi, Girelli’s theory of the identity of the cognitive act with the known “*quidditas rei*”, defended earlier by Alexander and other Greek commentators, fails to account in a satisfactory manner for the complex relation between subject and object of cognition<sup>239</sup>. I think that these conclusions by Poppi call for a number of comments. In the first place, it is not very likely that Pomponazzi’s arguments would have posed any particular problem for Girelli, as Poppi suggests. Like many of his contemporaries, Girelli did not shrink from overt misreadings and anachronisms, as appears from his interpretation of classical authorities. More generally, I think that the refutation of Zimara’s treatise, in particular with regard to the interpretation of Averroes, actually called for a more thorough technical and conceptual preparation than a refutation of Pomponazzi, whose question (as Poppi admits) was in many respects rather superficial<sup>240</sup>. Finally, Poppi seems to suggest that Pomponazzi was well aware of the complexity of the subject-

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<sup>237</sup> *Tractatus*, 36v: Gospel according to St. Luke, 16; Psalm 88. Numerous later Scholastic authors would adopt the same type of argumentation.

<sup>238</sup> *Tractatus*, 37r-v.

<sup>239</sup> Poppi, “La discussione”, 182.

<sup>240</sup> Poppi, *Saggi sul pensiero inedito*, 16.

object relation, while Girelli was not. This suggestion strikes me as a fundamental anachronism, based on a methodological fallacy. Notice that I have no quarrel with Poppi's call for a critical analysis of positions such as discussed here, a call for testing any position's intrinsic consistency<sup>241</sup>. I fully agree with Poppi that many studies on Renaissance philosophy lack genuine systematic interest. However, the sort of critical analysis envisaged here does not mean that we can just project on a thinker a conceptual scheme that was fundamentally extraneous to his thought, as is the case with the modern subject-object scheme. As we have seen, the 'subjective-objective' distinction had a wide range of specific meanings for the authors examined here, fundamentally different from the modern meaning of the homophonous distinction.

The controversy on intelligible species was primarily about a problem in the interpretation of Aristotle and his followers, but more generally it involved the status and function of mental representations. As observed earlier with regard to other authors, Girelli was not opposed to the notion of mental representation as such. He merely insisted on the unity of the intellectual act, even if that meant sacrificing the intellectual memory, which for the rest was absent anyhow in the writings of Aristotle and Averroes themselves. The really problematic part of his position concerns his opposition against trying to understand the mental act in terms of a physicalist framework, hence as being 'real'. Girelli tried to argue that the (known) forms are present in the mind only "objective", not "subjective". Thus, the explanation of knowledge acquisition is set free from ontological preoccupations, being based only on the postulate that the mind is able to directly extract cognitive contents from sensory information.

#### 4.2. *Simone Porzio*

Simone Porzio's account of the intelligible species should be seen in the context of his general outlook in psychology and epistemology<sup>242</sup>. Averse from the interpretations of Aristotle as given by

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<sup>241</sup> Poppi, *Saggi sul pensiero inedito*, 19.

<sup>242</sup> Simone Porzio, 1496 Naples—1554 Naples; possibly studied philosophy under Achillini and Pomponazzi at the University of Bologna; studied also under

Themistius, Simplicius, and Philoponus, but also rejecting Averroes' interpretation, Porzio's *De humana mente* made him one of the leading representatives of the Alexandrist movement in the Italian Renaissance<sup>243</sup>.

Like Alexander of Aphrodisias, Porzio saw the intellection as a natural process, the immaterial aspects of which should be attributed to the intervention of a supernatural agent intellect. Referring to the translations by Theodor of Gaza, Porzio also called this substance, which transcends the human soul, "Mens"<sup>244</sup>. *De humana mente* is primarily concerned with mortality and immortality, and it does not go into all the problems surrounding the species doctrine<sup>245</sup>. This particular attention for the status of the human intellect, which Porzio considered to be perishable<sup>246</sup>, does not mean that the work contains no epistemological speculation, however<sup>247</sup>.

Porzio started his *Quaestio de Spetiebus Intelligibilibus*, edited by Jacob Antonio Marta, with a terminological analysis of "speties"<sup>248</sup>. An equivalent for the Greek *eidos*, "speties" is an "aequivocum nomen"; indeed, also the proper form (*morfe*) of a thing may be called "speties". The term is also connected to the notion of *logos*, viewed as definition<sup>249</sup>. Finally, "speties" can be applied to anything that has organs<sup>250</sup>. In the present context, how-

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Nifo, and medicine in Pisa; 1520-25, ordinary professor first of logic there, then of physics; 1529-1545, professor in Naples; 1547-1554, professor of philosophy at the University of Pisa. For discussion, see Garin, *Storia della filosofia italiana*, vol. II, 541-44; Kessler, "The intellective soul", 519-521.

<sup>243</sup> *De humana mente disputatio*, Florentiae 1551, 3-4.

<sup>244</sup> *De humana mente*, 68-69, 70-74 and 86-87. This terminology was also used by Ficino; see, for example, his identification of the Aristotelian agent intellect with the Plotinian Mind, the First Intellect, or God, in *In Enneades* V.3.4, 1759, and *In Prisciani super Theophrastum*, 1826-27.

<sup>245</sup> They were only mentioned in passing; see, e.g., *De humana mente*, 80.

<sup>246</sup> *De humana mente*, 79.

<sup>247</sup> For discussion, see Kessler, "The intellective soul", 520-521.

<sup>248</sup> In *Opuscula*, Neapoli 1578, 31v-36v; see p. 31vb. The editor Jacob Antonio Marta also polemized sharply with Telesio; see his *Pugnaculum Aristotelis adversus Principia Bernardini Telesii*, Romae 1587.

<sup>249</sup> See also the terminological background of the Arabic "intentio", examined in ch. I, § 3.

<sup>250</sup> *Quaestio*, 31vb-ra; Porzio concludes that the "speties" is a "nomen commune ambiguum". For discussion of the various meanings of the term species, see also P. Michaud-Quantin, "Les champs sémantiques de *species*. Tradition latine et

ever, the term “speties” means “imago”, or what some people (“isti”) call “idea”. Hence, we may say that the intelligible species is an “imago rei intelligibilis”<sup>251</sup>.

Reflecting more specifically on the question “quid est”, Porzio gave a threefold reply: the intelligible species is quality, image, and effect<sup>252</sup>. At this point he started a dispute with the Latins, referring to Scotus, Thomas, Jandun and Henry of Ghent. Although Porzio had no particular bounds with any one of the Scholastic schools in medieval philosophy, his principal interlocutor was Duns Scotus, whose position he meticulously expounded and refuted at the end of his work<sup>253</sup>. I shall first examine his exposition of Scotus.

According to Scotus, the cognitive object must be presented to the intellect in a proportionate fashion in order to be known. Porzio rejected this claim: the idea that a cognitive object may precede the intellective act is fundamentally un-Aristotelian<sup>254</sup>. In more detail, Porzio examined Scotus’ argument that the phantasm as a singular entity is unable to determine the intellect<sup>255</sup>. Porzio noted that the intelligible species would not have this power either, as it is just a “qualitas realis”<sup>256</sup>. The position of the species be-

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traduction du Grec”, in idem, *Études sur le vocabulaire philosophique du Moyen Age*, Roma 1970, 113-150, and ch. II, § 1.

<sup>251</sup> *Quaestio*, 32ra.

<sup>252</sup> *Quaestio*, 32ra.

<sup>253</sup> *Quaestio*, 32rb; on pp. 32va-33rb, he summarized Scotus’ arguments: (1) the object precedes the act; (2) the phantasm cannot represent the universal, since (3) it moves only “singulariter”; (4)-(6) the agent intellect must have a real effect, namely, the universal representation; (7)-(8) knowledge of universals requires species; (9) if the intellect grasps the universal in the phantasm, it is not any longer separable. For Porzio’s solution of these arguments, see pp. 36r-37r.

<sup>254</sup> *Quaestio*, 33va.

<sup>255</sup> See the conception of an illuminated phantasm, developed by Henry of Ghent as an alternative to the species doctrine, and the subsequent criticism of Duns Scotus and others. Cf. ch. III, § 3.2 and ch. IV, § 1.1.

<sup>256</sup> Already Scotus characterized the sensible species as quality, in *Ordinatio*, I, dist. 3, pars 3, q. 1, 299. John Buridan, *Quaestiones De anima [Prima Lectura]*, in B. Patar, *Le Traité de l’ame de Jean Buridan [De prima lectura]*, Louvain-la-Neuve-Longueuil (Québec) 1991, 459 (quoted in ch. IV, § 3.2), described both mental act and intelligible species as qualities. Also Taddheus of Parma defined the intelligible species as “qualitas” and the mental act as “passio”; cf. ch. IV, § 4.4, and *Le Quaestiones de anima di Taddeo da Parma*, Milano 1951, 47 and 94-95. For a similar position, see James of Piacenza (ch. IV, § 4.6). By contrast, most representatives of the Second Scholasticism would regard the mental act as either

comes even worse if it is assumed that the intelligible species also contains the universal "quidditas" of the represented object. The intelligible species is compared to a mirror which reflects a variety of things, but which at the same time is a singular object made of lead and glass. On strength of this analogy the species has two natures, namely, its own individual "qualitas", and that of the universal it represents. This inevitably leads to the question in which sequence the two alleged natures are (re)presented to the intellect by the species. Presumably the species represents first its own individual nature to the intellect and then the universal, just like we first look at the mirror and then see our image reflected in it. But this implies that the intellect must be able to access the "quidditas" on the basis of the sensory phantasm alone. Hence, the species is simply superfluous<sup>257</sup>. Moreover, assuming that the species exist, the intellect would receive something that is unknown, and hence would be debased to the lowly status of prime matter<sup>258</sup>.

The redundancy of intelligible species is demonstrated further in terms of two Aristotelian-Averroistic principles: first, that the phantasm is able to move the intellect, and second, that the "terminus per se" of the agent intellect is the "intellectus in actu". Thus, the actually known object is the only thing received by the intellect, by which it is grasped "cum cognitione"<sup>259</sup>. This added qualification was apparently intended by Porzio to distance himself from a purely physical understanding of the cognitive process<sup>260</sup>. This intention is confirmed by his argument that the species doctrine entails a fundamentally inadmissible similarity between the reception of forms by matter, by the senses, and by the intellect<sup>261</sup>.

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"actio" or as "qualitas"; see Caietan's interpretation of the intellection as "pati" (discussed in ch. VII, § 2.1), and for the later debate ch. X and XII, § 2.

<sup>257</sup> *Quaestio*, 33vb. Ockham used a nearly identical argument against intelligible species; cf. ch. IV, § 3.1.

<sup>258</sup> *Quaestio*, 33vb-34ra. To the best of my knowledge, this last argument had not been used earlier in the species controversy.

<sup>259</sup> *Quaestio*, 34ra.

<sup>260</sup> Kessler, discussing *De humana mente*, is convinced of the contrary, see "The intellectual soul", p. 520: "The process of intellection, then, had to be reconstructed in terms of a natural motion, through which a form was moved from one subject to the other"; see also p. 522. However, the text quoted in Kessler's note 263 does not support his interpretation.

<sup>261</sup> See *Quaestio*, 34rb.

Finally, Porzio remarked that Averroes discussed only two intellectual operations, namely, "formatio", consisting in a reception of the intellectual act or of the intelligible object, and "fides", that is, discursive reasoning<sup>262</sup>.

The intellect receives a form or "speties" that is immediately known<sup>263</sup>. Duly accepting the receptivity of the human intellect, Porzio persistently rejected all mediation by *un*-known, or only secondarily known forms<sup>264</sup>. The soul may receive "qualitates"; in the case of the intellect, however, these qualities coincide with the cognitive acts<sup>265</sup>. For this reason, Porzio explicitly accepted the view of species proposed by Godfrey of Fontaines<sup>266</sup>. Porzio explained why the receptivity of the intellect is essentially different from that of matter. The latter receives its "ultima actus" only after a long series of intermediate steps. The human mind, by contrast, is immediately related to its "ultima perfectio"<sup>267</sup>. The mind's direct grasp of the intelligible object is a crucial argument against the need for mediating species:

Hoc est maximum argumentum, actus essentialis est ipsum intelligibile, ergo quod primo extrahitur est intelligibile, non speties probo.<sup>268</sup>

Reflecting on the foundations of the "vera opinio", Porzio rejected the idea that the agent intellect is a "real", that is, a physical motor. In his analysis of the relation between the agent intellect and the phantasm, Porzio emphatically stated that terms like

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<sup>262</sup> *Quaestio*, 34rb; see also p. 35vb, where Porzio referred again to co. 21-22 of Averroes' *De anima* exposition. In these passages Averroes analyses the distinction between simple apprehension and judgement in *De anima*, 430a26-31. See Averroes, *In De anima*, 455: "Et quia famosior differentiarum per quas dividitur actio intellectus sunt due actiones, quarum una dicitur *formatio* et alia *fides*, incepit hic notificare differentiam inter has duas actiones. Et dixit: *Formare autem res indivisibiles*, etc. Idest, comprehendere autem res simplices non compositas erit per intellecta que non falsantur neque veridicantur, que dicitur *informatio*; comprehendere autem ab eo res compositas erit per intellecta in quibus est falsitas et veritas."

<sup>263</sup> *Quaestio*, 34rb. Cf. the position of Gregory of Rimini, who regarded the species as mnemonic content, discussed in ch. IV, § 3.3.

<sup>264</sup> See *Quaestio*, 34va: the intellection is an "intelligible reception".

<sup>265</sup> *Quaestio*, 34vb: "ergo illa receptio non est illa speties intelligibilis, sed est intellectio lapidis, & est illa forma intentionalis lapidis (...)"

<sup>266</sup> *Quaestio*, 34va-35rb; for Godfrey, see ch. III, § 3.3. See also the similar position of Baconthorpe, examined in ch. IV, § 2.2.

<sup>267</sup> *Quaestio*, 34va-35ra.

<sup>268</sup> *Quaestio*, 35rb.

“motor, motum, & materia” apply to the cognitive process only “metaphorice”<sup>269</sup>. Indeed, in contrast to what the Latins thought, the agent intellect is not an “agens reale” like heat, for example, but rather an “agens illuminans”. The agent intellect moves the phantasm “per similitudinem”<sup>270</sup>. The phantasm does not represent the universal but the singular form. Still, it contains the potential intelligible, which is “quid commune pluribus”, and therefore it “fit universale”<sup>271</sup>. The intellectual apprehension of universals is not a kind of physically generated act, and therefore it cannot be identified with any produced quality<sup>272</sup>. Objects are accessible to the human mind in a particular mode of being, namely, as actual intelligibles. Porzio paradoxically described intelligibility as “passio entis in actu”<sup>273</sup>. Sensible things become intelligibles when their intrinsic formal structure is isolated by the agent intellect. Then the human mind is able to grasp them immediately.

Like other opponents of the doctrine of intelligible species, Simone Porzio sought for a consistent theory of knowledge and concept acquisition based on an alternative view of the intellect’s receptivity. He endorsed the fundamentals of Peripatetic naturalism, but at the same time he tried to uproot cognitive psychology from its traditional physicalist setting. Porzio wanted to eliminate all mediating formal principles from the theory of knowledge, and persistently declined an overly physical interpretation of the operation of the agent intellect. He accordingly grounded the unity of mental act and cognitive content in the assumption that the mind has a capacity to establish direct

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<sup>269</sup> See also Caietan’s theory of an ‘objective’ illumination and his exhortation to pay attention to the signification of the “vocabula” used; cf. above § 2.1. Zimara, on the contrary, stressed that the affinity between senses and intellect should be based on a real similarity; this entailed a ‘subjective’ reception of intelligible species.

<sup>270</sup> *Quaestio*, 35vb.

<sup>271</sup> *Quaestio*, 35rb-va, and 36rb-vb. See also the conception of universals in Pomponazzi, *Quaestio de universalibus*, 127; quoted in § 1.1.

<sup>272</sup> *Quaestio*, 35vb: Porzio rejected several modes of production, namely, (1) by the object and the possible intellect, (2) by an informed possible intellect, or (3) by the agent intellect alone.

<sup>273</sup> *Quaestio*, 35va-b. Notice that also some exponents of the post-Jandun Averroism regarded the intellectual act as “passio”; see Taddeus of Parma and James of Piacenza, analyzed in ch. IV, § 4.4 and 6.



contact with the formal structure of sensible reality. As is demonstrated by Pozzio's work, we are almost ineluctably drawn to the conclusion that all alternatives to the species doctrine are eventually bound to beg the question of knowledge acquisition: if all intermediate principles and mechanisms are shunned, the mental act can only be based on the postulate of a direct grasp of the invariants contained in sensible experience.

### § 5. CONCLUSION

Scholarly speculation on mental representation in the first half of the sixteenth century, as compared to its earlier history from Antiquity to the early Renaissance, shows two important developments. First of all, with the application of the 'subjective-objective' distinction to mental being, to illumination and to intellectual reception, the bounds of the original Aristotelian framework for discussing cognitive psychology are beginning to show. Secondly, there is a significant shift in the way the notion of intelligible species is characterized.

One of the most significant contributions to the 'subjective-objective' debate was doubtless that of Marcantonio Zimara. He accepted the idea (which was mostly but not exclusively used by opponents of species) that cognitive content exists 'objectively' in the mind<sup>274</sup>. His originality lies in the fact that he attempted to demonstrate that the 'objective' existence of contents in the mind necessarily presupposes a 'subjective' reception of the vehicle of these contents, that is, of the intelligible species. This construction served a double purpose. It enabled Zimara to distinguish mental contents from physical objects, while at the same time explaining how contents may originate, or more precisely, how they may be generated by a physicalistically conceived mechanism. In an altogether different (because anti-naturalistic) context, Caietanum came to a conclusion that seems to be the mirror image of Zimara's, namely, that the generation of the 'formally' intelligible species is

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<sup>274</sup> See already James of Piacenza, who postulated the subjective reception of the "species lapidis" and the objective existence of the stone itself in the intellectual soul.

conditioned by the 'objective' presence of the intelligible form in the phantasm. In spite of their obvious differences, Zimara and Caietanus fundamentally agreed in rejecting an unmediated generation of intellectual knowledge.

Opponents such as Girelli, by contrast, argued for the 'objective' presence of sensible forms in the human mind, closing the gap between mind and world by presuming that the mind is directly informed by the sensory representational devices. A similar approach was used by Porzio to explain concept acquisition. Generally speaking, the opposition was primarily concerned with maintaining the intrinsic coherence of the mental act, stressing the coincidence of effective apprehension and actual cognitive content. The price to be paid for this manoeuvre is that the production of the act itself is left unexplained, all possible intermediate steps being ruled out *a priori*. Here as well as in the medieval opposition, we find that the elimination of intermediary mechanisms may simplify cognitive psychology, but that in doing so it may also fail to address the fundamental issue which the species doctrine was meant to resolve: *how* does the immaterial mind know or represent sensible reality?

Finally, let me say something about the shift in the way the species are characterized. The post-Nifo generation of Italian Aristotelians, with authors such as Buccaferrea and Vimercato, either eliminated the intelligible species or assimilated it to the concept of "notio". Other opponents, such as Porzio, simply take over the traditional characterization as accident, that is, "qualitas", as had already been proposed by some post-Jandun Averroists. Porzio also mentioned "idea" as a possible term for intelligible species<sup>275</sup>. Now, while "notio" and "idea" denote the species as mental (re)presentation of an extra-mental object, the definition of "qualitas" focuses on the species' ontological status. This duality in the concept of species and its equivalents betrays how fundamentally puzzling the notion is in an ontological sense, however functional it may otherwise be in a psychological sense. This inherent conflict will play an important role in the psychology of the sec-

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<sup>275</sup> For an assimilation of species to idea, see already the Latin Neoplatonics, examined in ch. I, § 4.1, and, among others, Marsilio Ficino (ch. VI, § 1.3).

ond half of the sixteenth century, too, in Peripatetic as well as in other authors. The problem of the ontological status and psychological function of mental representations will also return, in a different setting, in early modern accounts of the idea's formal and objective being.

CHAPTER EIGHT

FROM SIMPLICIAN AVERROISM TO THE NEW  
PHILOSOPHY

The work of Marcantonio Genua, his immediate followers and later Simplicians meant a new injection of Neoplatonic views into the Aristotelian psychology of the Renaissance. Genua sought to harmonize the interpretations of Peripatetic psychology given by Simplicius and by Averroes in a manner that was essentially different from that of earlier, eclectic attempts by authors such as Vernia and Nifo<sup>1</sup>. The latter was in fact severely criticized by Genua<sup>2</sup>. It is rather surprising that Genua accepted the notion of intelligible species. He did not think of the species as originating from the phantasms, however. According to Genua, the intelligible species are essentially innate, an integral part of the dynamics of the rational soul's descent and ascent. Genua's idiosyncratic reading of Simplicius' psychology created a large circle of adepts, who developed a number of different and sometimes even contrasting interpretations of the intelligible species. Their works will be analyzed together with that of Genua in the first section.

In the second section I turn to a number of authors whose activity coincided chronologically with Genua's, but who either explicitly rejected his psychology and epistemology, as in the case of the Alexandrist Castellani, or developed a philosophically neutral and more erudite type of psychology, similar to that of Buccaferrea and Vimercato<sup>3</sup>. The huge number of sources and

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<sup>1</sup> For a detailed analysis of the various translations of Simplicius' *De anima* commentary, see Nardi, "Il commento di Simplicio al *De anima* nelle controversie della fine del secolo XV e del secolo XVI", 365-383.

<sup>2</sup> See Nardi, "Il commento di Simplicio", 389-90; Kessler, "The intellective soul", 523; F. Romano, "Averroismo e neoplatonismo nel Commentario al 'De anima' di Marco Antonio de' Passeri detto il Genua", in *Studi e ricerche sul neoplatonismo*, Napoli 1983, 89-96, on pp. 92-93.

<sup>3</sup> See ch. VII, § 3.2.1-2.

commentaries discussed by authors such as Montecatini led to positions that were not particularly original, although they are often interesting from a historical point of view. Also rather conventional was the psychology of Filalteo, translator of Simplician writings.

Many sixteenth-century philosophers revolted against the humanist philological reading of Aristotle in favour of a more substantive approach. Symptomatic of this trend was the adoption of Thomas' system by the Jesuits in Spain and Portugal, and the rehabilitation of Averroes and Jandun in Italy<sup>4</sup>. The same desire for more substantive forms of philosophy may be found in the works of non-Aristotelian authors such as Bernardino Telesio and Giordano Bruno. They were generally loath to respect the authority of the traditional schools, and developed new methodologies for discussing traditional philosophical themes. Bruno endorsed the notion of species, but not without modifying it. Telesio did not discuss the doctrine of intentional species himself, but he was the main source for the psychology of Tommaso Campanella, who would later reject the species on the basis of views borrowed from Telesio. Their positions will be discussed in the final section of this chapter.

### § 1. THE EMANATION OF THE SPECIES DISCUSSED

With the work of Marcantonio Genua, the history of Neoplatonic *De anima* commentaries within the framework of Renaissance cognitive psychology entered a new phase. Before turning to the species doctrine developed by Genua, his pupils, and other authors, it may prove useful to recapitulate the cognitive psychology of Simplicius, the Neoplatonic commentator on whose work they drew.

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<sup>4</sup> K. Park & E. Kessler, "The concept of psychology", in *Cambridge History of Renaissance Philosophy*, 455-463, on p. 462.

### 1.1. *Simplicius on noetics and cognition of sensible reality*

Endorsing the “*skopos*” conception of Iamblichus, which says that each work by Plato and Aristotle deals with only one argument, Simplicius determined that the scope of Aristotle’s *De anima* is principally the *rational* soul<sup>5</sup>. He argued that *De anima* is a strictly *psychological* treatise, which touches on noetics only marginally. The rational human soul is seen as individual. It must be distinguished from the participated intellect: the latter, though connected to the soul as the source of its coherence, at the same time transcends the human soul. At a still higher level there is an unparticipated intellect<sup>6</sup>.

The rational soul may be said to exist at a number of distinct ontological and psychological levels. Simplicius distinguished between an unchanging “*intellectus manens*” and an “*intellectus progressus*”. The latter projects itself onto the extramental world, and it has two modes of being: potential being, and being perfected by its own “*processio*”<sup>7</sup>. At its highest level, the human soul is con-

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<sup>5</sup> As noted in the Introduction, the authenticity of Simplicius’ *De anima* commentary was challenged by Francesco Piccolomini, and recently by two scholars, F. Bossier and C. Steel, “Priscianus Lydus en de *In de anima* van Pseudo(?) Simplicius”, in *Tijdschrift voor Filosofie* 34(1972), 761-821. For the sake of convenience, I shall continue to refer to this *De anima* commentary as being the work of Simplicius. For a survey of the discussion since the Bossier-Steel paper, see Mahoney, “Greek commentators”, 269, note 7, and H.J. Blumenthal, “The psychology of (?) Simplicius’ commentary on the *De anima*”, in *Soul and the Structure of Being in Late Neoplatonism*, eds. H.J. Blumenthal and A.C. Lloyd, Liverpool 1982, 73-93, on pp. 73-74. For the Iamblichean conception of *skopos*, see p. 77 of the latter article, and by the same author, “Neoplatonic elements in the *De anima* commentaries”, in *Phronesis* 21(1976), 64-87, on p. 76f.

<sup>6</sup> I refer to the Latin version of Simplicius’ commentary, *Commentaria in III libros De anima*, interpretate Evangelista Longo Asulano, Venetiis 1564, 57va and 58ra; see also 63rab and 64ra. For discussion, see Blumenthal, “The psychology of (?) Simplicius’ commentary”; idem, “Neoplatonic elements in the *De anima* commentaries”, 65-69, and 79-80; I. Hadot, *Le problème du néoplatonisme alexandrin. Hiérocles et Simplicius*, Paris 1978, ch. VII, and idem, “La doctrine de Simplicius sur l’âme raisonnable humaine dans le commentaire sur le Manuel d’Epictète”, in *Soul and the Structure of Being in Late Neoplatonism*, eds. H.J. Blumenthal and A.C. Lloyd, Liverpool 1982, 46-71; C. Steel, *The Changing Self. A Study on the Soul in Later Neoplatonism: Iamblichus, Damascius and Priscianus*, Brussels 1978, pp. 121-141.

<sup>7</sup> *In De anima*, 57va: “*Altera quidem separabilis, & propriis cognoscibilibus ex seipsa plena: per quam partem fit conversio animae in seipsam, & contactus cum praestantioribus. Altera vero, secundum quam anima exurgens & recedens a suimet*

nected with the participated intellect, and it is capable of grasping the ideal forms by direct intuition<sup>8</sup>. At this level of undivided intellection the rational soul may be identified with Aristotle's agent intellect. According to Simplicius, the mental act stands for a hierarchically well-defined level in the mental life of the rational soul<sup>9</sup>. Possible (or potential) and agent intellects are distinct phases or moments in the development of human rationality, rather than distinct faculties.

The rational soul is a 'progressing' intellect when it projects itself onto the perceptual faculties, the so-called "*vitae secundae*". At this stage it is a potential intellect: in the downward projection it moves from thought to perception. The rational soul uses the body as an instrument, approaching the sensible things 'from without'<sup>10</sup>. From this imperfect state the human soul may recover its perfection by a process of introspection, characterized as 'ascent'. Returning to its inner self, the soul that first dwelt in the external world is now illuminated by the agent "*intellectus manens*", and thus becomes habitual. This illumination is the actualization of the forms potentially contained in the soul<sup>11</sup>.

According to Simplicius, the rational soul is involved in a dynamic process that goes on between two extremes: on the one hand the "second lives", on the other hand the separate unparticipated intellect<sup>12</sup>. The progressing soul goes out to cognitive objects ex-

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mansione, tota extenditur ad haec secunda." See Steel, *The Changing Self*, 126-28, and 132.

<sup>8</sup> *In de anima*, 63rab.

<sup>9</sup> Cf. Steel, *The Changing Self*, 133.

<sup>10</sup> *In de anima*, 62vb; cf. Steel, *The Changing Self*, 134. For the Neoplatonic interpretation of the human soul using the body as organ, see Blumenthal, "The psychology of (?) Simplicius' commentary", 79; idem, "Neoplatonic elements in the *De anima* commentaries", 83; idem, "Some Platonist readings of Aristotle", in *Proceedings of the Cambridge Philological Society* 207, n.s. 27(1981), 1-16, on pp. 3-4.

<sup>11</sup> *In de anima*, 63rab: "Iccirco cum praedictis continuationem facientes dicamus, quod tradito iam duplici intellectu, quia principali animae substantia recedit quidem, & propterea etiam a connata ipsius actione, attamen provenit ad secundas vitas & contemplationes, aut imperfectas, aut perfectas quidem, sed quae per occursum fiunt, & tanquam ab alteris formis in prima substantia manentibus perfectae fiant, considerat nunc intellectum, qui iuxta ipsum substantialem stat actum, quique formas intelligit, non provenientes ad extra, sed, quae in ipsa animae substantia manent." See also 64rb.

<sup>12</sup> *In de anima*, 63rb.

ternal to itself, but only to discover upon return that it already contained these objects in its inner self as colours without light<sup>13</sup>. In other words, the human intellect projects itself onto the extra-mental world before subsequently retreating from the “imagines” to the “exemplaria prima”<sup>14</sup>. Indeed, cognition was described by Simplicius as a dynamic process based on a “formalis affinitas” with the “cognoscibilia”<sup>15</sup>.

The rational soul is not a static faculty. It unfolds its essence at three distinct levels, becoming gradually aware of the ideal *a priori* contents slumbering in its own essence. Notice that the connection between rational soul and corporeal reality is not seen as totally negative. It is true that the human body stands in the way of a quiet and balanced contemplation. Yet, the descent of the potential intellect into the lower sensitive soul should not be seen as a ‘fall’: the “second lives” are an integral part of the top-down unfolding of the higher rational forces<sup>16</sup>. The rational soul descends into the senses, and then it perceives the material world. At this stage, then, the rational soul displays activities that do not match its original ontological status<sup>17</sup>. According to well-known Neoplatonic principles, however, the lower perceptual capacities depend on the higher cognitive capacities<sup>18</sup>.

Simplicius actually suggested that the nature of the soul changes in accordance with its different activities at various stages, distinguished ontologically as well as psychologically. The soul has no fixed nature; rather, any alleged nature it may be said to have is at any time the instantaneous outcome of a process in which the soul is a self-moving force. In accordance with this outlook, it is ruled

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<sup>13</sup> *In de anima*, 63vb: “Eo nonne quia colores actu manentes colores, potestate tamen visibiles, lumen praesens facit ipsos esse actu, hac ratione similitudinem manifestat cum intellectu, qui actu perficit formas in passibili intellectu potestate cognoscibiles. Demonstratque simul, quod in passibili intellectu non ita potestate erant, ut omnes non subsistant, sed ita quidem sunt, at ut incognitae.”

<sup>14</sup> *In de anima*, 73rb

<sup>15</sup> *In de anima*, 19rb and 19vb; see 34vb: all knowledge is grounded in intelligible forms.

<sup>16</sup> See Steel, *The Changing Self*, 62.

<sup>17</sup> According to Steel, *The Changing Self*, 137, it is inevitable that the descent causes a rupture, in a certain sense, between the rational soul’s being and its activity.

<sup>18</sup> *In de anima*, 51rv.



out that the human soul can be totally potential or oblivious: the intelligible forms are always present in the soul, even if only latently so. Thus we may say that empirical knowledge is not a matter of external objects effectively moving the soul, but of the soul waking up in itself, or being moved from within. This is why Simplicius restricted the Aristotelian “non sine phantasmatis” to the sphere of the practical intellect only<sup>19</sup>.

### 1.2. Marcantonio Genua

In a continuous polemic with Nifo, Genua's<sup>20</sup> commentary on *De anima* sought to harmonize the view of Simplicius with central insights of Averroes' psychology<sup>21</sup>. Genua based himself on the Simplician theses that (1) the essence and cognitive activity of the rational soul should be analyzed in terms of the relation between the separate intellects and sensible reality, and (2) the substance of the soul is essentially one *and* many<sup>22</sup>. From Averroes he took over the view that the specific nature of man depends on the “cogitativa”<sup>23</sup>. Thus, Genua wanted to bring together Simplicius'

<sup>19</sup> *In de anima*, 70ra-71va; cf. 74 r-v.

<sup>20</sup> Marco Antonio de' Passeri (Genua), 1491 Padua—1563 Padua; studied philosophy and medicine at the University of Padua; 1512 doctor artibus et medicina there; taught philosophy in Padua between 1517 and 1563, from 1525 in concurrence with Marcantonio Zimara. For discussion, see Nardi, “Il commento di Simplicio”, 386-94; for his opposition against Zimara, see idem, *Saggi*, 341-3. I have used the following edition: Marcus Antonius Passerus, cognomento Genuae, *In tres libros Aristotelis de Anima exactissimi Commentarii*, Venetijs 1576.

<sup>21</sup> Nifo was reproached for having misunderstood Simplicius; cf. *In de anima*, 126va, 138va, 143rb, 152rb, 157va, and 159r. Nifo's philosophical limits regarded other, not typically Simplician questions as well; cf. 143rb: he did not have an adequate conception of the knowledge of singulars.

<sup>22</sup> *In de anima*, 23vb: “(...) ut ait Simplicius, substantia animae est una, & plures; una, quae subiecto una, & ad corpus vergit, & corpore utitur: & de omni hac habet physicus suam agere rationem: secundum enim, quod ipsam considerat, materiam tangit anima; secundum verò, quod differunt, non modo una, sed & multae: quare considerans eam, secundum quod separabilis, non de omni considerat, sed propriè de inseparabili à corporibus qualitatèrcunque.”

<sup>23</sup> Cf. his own conclusions: *In de anima*, 37ra-va; cf. 139va: “eandem sententiam voluit Simplicius in prologo huius tertii, cum dicat: Una enim existit anima nostra rationalis, dico, quae simul manet, & plurificatur in eo, quod ad corpus vergit, non purè manens, neque penitus distans: sed partim manens; partim à seipsa progressa. Quae conclusio cum satis secundum peripatetica fundamenta firmata sit, & secundum peripateticos expositores”; p. 33ra: the soul which informs the body, uses this as organ. Elsewhere, he argued that man knows through the intellectual soul, but he excluded that the (unique) intellect endows man with his specific be-

view of a dynamic rational soul and Averroes' notion of a unique intellect.

Using the terminology developed by Simplicius, Genua referred to the active and potential intellect as "intellectus perfectus" or "manens", and "intellectus progressus", respectively<sup>24</sup>. Descending towards the "secundae vitae", the unique intellect undergoes essential change<sup>25</sup>. Following Simplicius, the "intellectus progressus" was said to have two states, one potential, the other in act<sup>26</sup>. Elsewhere, Genua integrated this dynamical view of the intellect with a somewhat more traditional classification of the cognitive faculties<sup>27</sup>.

In the Greek original as well as in the Latin translation, Simplicius consistently spoke of innate intelligible *forms* rather than species, which is hardly surprising. While presenting himself as a genuine disciple of Simplicius, Genua nonetheless thought it possible to endorse a version of the species doctrine<sup>28</sup>. In the same way as the soul, when it informs the body, uses the latter as an organ, so also the unique intellect is linked with the human "cogitativa" by its use of the phantasms. This means that the agent intellect, which is the lowest of the celestial intelligences, has an activity (namely, the use of sensory representations) that does not belong to its proper substance<sup>29</sup>. Conversely, as seen from the perspective of *human* mental life, Genua argued that the individual soul is connected to this intellect by the actually known intelligible species:

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ing; see *In de anima*, 132vb: "sed ut operans intrinsecus; quia sic unitè se habet ad corpus humanum secundum naturam; quo modo dicimus intelligentiam movere caelum"; cf. 135va and 185va.

<sup>24</sup> *In de anima*, 146rb, 152vb, and 157vb.

<sup>25</sup> *In de anima*, 127ra: "(...) egreditur ad secundas vitas, & operationes, quibus & speculatur a phantasmatis accipiens: & etiam activè, & factivè tradit principia & cognoscendi, & agendi: est enim rationalis anima manens, & progressa; ut non sic manens, quin progressus; ut non sic progressus, quin manens." On p. 141va-b, Genua observed that Simplicius' noetic terminology should be preferred to the traditional denominations of agent and possible intellect. For the notion of a unique spiritual principle which descends and ascends, see also Cusanus, *De mente* (examined in ch. VI, § 1.1), and Giordano Bruno, *Sigillus sigillorum* (§ 3.3, below).

<sup>26</sup> *In de anima*, 157vb.

<sup>27</sup> *In de anima*, 167rb.

<sup>28</sup> See, for example, *In de anima*, 60ra.

Non est intelligens homo actu, nisi intellectus cum eo continuetur actu. Talis non intelligenda est, quòd det esse; sed per speciem intelligibilem actu intellectam: quae, ut sic, est universalis; cui sua singularis reperitur in cogitativa propria homini forma; & cum illa unitur; & per illam, intellectus cogitativae: quare sic dicitur homo intelligens.<sup>30</sup>

This known intelligible species was obviously not meant as a formal, mediating principle of cognition, something originating from the cooperation of intellect and sensitivity. In fact, on the same page Genua distanced himself from certain unnamed “subtiles Thomistae”. Yet, it is significant to note that the cognitive role of the intelligible species warrants a certain plurality of intellects. *Subjective*, or essentially, the intellect is one, but *objective*, with respect to the use of phantasms and species, it is multiplied<sup>31</sup>. Thus using the notion of intelligible species to make a noetic distinction, Genua introduced a variation on a particular application of the ‘subjective-objective’ distinction in Renaissance cognitive psychology<sup>32</sup>.

Simplicius was not the only writer to influence Genua’s view of the intelligible species<sup>33</sup>. A number of medieval and contemporary authors had their bearing, too, as appears from Genua’s analysis of the modalities of self-knowledge, where some problematic aspects of the traditional species doctrine are discussed. The notion of intelligible species eventually endorsed by Genua was closely related to the Platonic idea. At this stage of his discussion, however, he took the species as accidental entities acquired from sensory representational devices. Now, each of the problems discussed in the

<sup>29</sup> *In de anima*, 135ra; cf. 22va-23ra.

<sup>30</sup> *In de anima*, 135va. See also 138rb: the intellect is joined with the human race through “intentiones intellectae”.

<sup>31</sup> *In de anima*, 137rab and 139va.

<sup>32</sup> See also the “objective” contribution of the phantasy in the production of the species in *In de anima*, 148va. One should recall, however, that Vernia already used the conception of intelligible species to explain the plurality of created intellectual souls; see ch. VI, § 2.1. See also Pomponazzi’s determination of the ontological status of the intellectual soul; the latter is “subiecto” independent of the body, but not “obiecto”, because its knowledge cannot do without the senses; cf. *De immortalitate animae*, cap. IX. Cf. also Jandun’s solution to the puzzle of inter-subjective knowledge, analyzed in ch. IV, § 4.3.

<sup>33</sup> See also, *In de anima*, 148va: “Ad hoc autem dicendum, quod quidditas substantiae, verbi gratia, lapidis, quae vera species est, & idea, pro isto statu non intelligitur”.

context of the mind's self-knowledge appears to have some connection with the species' allegedly being accidental states. If the intelligible species are seen as accidents, so Genua argued, then not only is self-knowledge impossible, but cognition of the substantial essences is ruled out, too. There are also other problems that should be mentioned here. First, how could a perishable accident ever be stored in an eternal subject? And secondly, if it is true, as Themistius observed, that the intellect identifies itself with the "species acceptae", then the mind would automatically assume an accidental character<sup>34</sup>. Finally, once the intellect is informed by this type of forms, it would always be in act<sup>35</sup>. Most of these objections rest on Averroes' interpretation of Peripatetic psychology, and were known before Genua<sup>36</sup>. Nonetheless, this was assuredly the first time that they were raised in the context of Simplician psychology.

It is hardly surprising that Genua's conception of self-knowledge was based on intramental actualization<sup>37</sup>. Accordingly, Genua declined the need for species in this case<sup>38</sup>. He gave a refutation of Nifo's interpretation of the species as mental act. He also referred to the latter's opinion that Averroes denied the existence of species<sup>39</sup>. Remarkably, and in contrast to Nifo, Genua then drew the conclusion that Aristotle thought species are needed<sup>40</sup>. He even claimed that this view is supported by Averroes' notion of intention, as well as by Simplicius, who presupposed the presence of "veras formas" in the "intellectus manens", and of their "vestigia" in the "intellectus possibilis". Now, intelligible species should be distinguished from sensible species, as notions are distinct from phantasms<sup>41</sup>. For this distinction he appealed to the authority of

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<sup>34</sup> *In de anima*, 145ra; for the knowledge of substances, see also 20rb-va. For a discussion of Themistius' 'doctrine of species', see ch. I, § 2.

<sup>35</sup> *In de anima*, 145ra.

<sup>36</sup> See, for example, the position of Achillini (in ch. VI, § 2.2); cf. also Nifo (ch. VI, § 3).

<sup>37</sup> *In de anima*, 145rab.

<sup>38</sup> *In de anima*, 151rb. See already Henry of Ghent's argument against intelligible species, discussed in ch. III, § 3.2.

<sup>39</sup> *In de anima*, 145va.

<sup>40</sup> *In de anima*, 145vb: "Tenendum puto in hac materia, secundum Aristotelem dari species intelligibiles."

<sup>41</sup> *In de anima*, 145vb.

Themistius, but it is not inconceivable that he was also acquainted with Nifo's assimilation of species and "notio"—a psychologically more appealing, but epistemologically different concept. As we have seen, this assimilation was also endorsed by other authors in the sixteenth century<sup>42</sup>.

For more details concerning the nature and function of the intelligible species in Genua, we must turn to the broader Simplician outlook of his cognitive psychology. Like Averroes, Genua believed that the cognitive act depends on the body as its *conditio sine qua non*<sup>43</sup>. The intellectual soul is not the form of the body<sup>44</sup>, however, but the formal principle by virtue of which man has knowledge<sup>45</sup>. In this construction the intellect needs phantasms for its acts<sup>46</sup>. From Simplicius Genua took over the view that the intellect is not completely passive or potential, as appears from the Platonizing definition Genua gave of the Aristotelian "pati"<sup>47</sup>. Intellectual knowledge does not depend on incoming forms or representations. Indeed, the description of the intellectual soul as a "locus formarum" holds only for contents "a se ipsa fluxa", since the idea that intelligibles may penetrate the soul from without involves a contradiction<sup>48</sup>. However, by claiming that the "intellectus progressus" as such is dependent on phantasms, Genua expressly departed from Simplicius, who restricted this dependence to the practical intellect<sup>49</sup>.

Genua thought that the rational soul is moved by the "intentiones imaginatae"<sup>50</sup>, but he rejected the idea that sensory

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<sup>42</sup> *In de anima*, 145vb; as a logical consequence the species was assimilated to the Greek *noema*. See ch. I, § 2 and 4.3 for the Latin translations of Themistius; cf. also ch. VI, § 3.3, ch. VII, § 3.2, and Montecatini's position (below in § 2.3).

<sup>43</sup> *In de anima*, 22vab.

<sup>44</sup> This is the "cogitativa"; cf. *In de anima*, 37ra–va.

<sup>45</sup> *In de anima*, 132vb and 138rb.

<sup>46</sup> *In de anima*, 135ra.

<sup>47</sup> *In de anima*, 127vb: "nostra itaque rationalis anima neque pura permanet, neque omnino cedit: nam in lapsu illo haud ita labitur, quia in se ipsam aliquo modo converti queat: unde, ut sensus a sensibilibus; sic & talis anima ab intelligibilibus, atque ab illo intellectu, qui eiusdem ordinis cum illo est, excitatur, atque expletur".

<sup>48</sup> *In de anima*, 127vb: "(...) at intelligibilia neque foris sunt; sed intus reperiuntur"; cf. 143vb.

<sup>49</sup> *In de anima*, 171ra, 172rb, 173vb, and 174va.

<sup>50</sup> See *In de anima*, 130ra: "rationalis anima indiget considerare intentiones imaginatas, ut ab eis moveatur".

representational devices may determine the contents of intellectual cognition. When the phantasy forms the phantasm of a stone, for example, this is at best an occasion for the agent intellect to provide the possible intellect with a “species lapidis”, produced by virtue of one of its own ideas:

(...) nam per virtutum subordinationem, dum phantasia phantasiatur speciem lapidis huius; intellectus possibilis ab agente suo illustratur virtute ideae lapidis illius: at non pro esse ideali, & prima vita; sed pro esse formali, & secunda vita. In cognitione lapidis illius speciei, ob hoc mens comparatur possibili, ut agens; non autem ut forma. Ad argumentum primum, dicitur, quòd causatur à phantasmate, & ab intellectu agente: neque etiam à phantasmate, ut phantasma est; sed à phantasmate occasionaliter ab agente in ente.<sup>51</sup>

Elsewhere, the true species is equated with the “quidditas” and the Platonic “idea”<sup>52</sup>. Genua believed that the potentiality of the “intellectus progressus” is in fact nothing but its failing to actually possess the intelligible species<sup>53</sup>. In this fallen state (“lapsus”), the intellect lives in ignorance of its own contents, and it needs to be elevated by the agent intellect<sup>54</sup>.

The term “species” in Genua is not always used to denote the immanent formal principles of the rational soul<sup>55</sup>. Also the possible intellect, in its ‘fallen state’, is said to receive species from the senses. However, these are only extreme “vestigia” of the true forms:

Cum intellectus, qui a propria perfectione elapsus, ad sensus conversus sit; neque formas illas intellectuales habet, ut manens; susceptivus tamen illarum, esse dicitur; non autem, ut potentia talis: quare per species à sensibus acceptas, quoquomodo dispositus, & habitu redditus talis: nam species tales sunt, veluti extrema vestigia

<sup>51</sup> *In de anima*, 145vb-146ra. Dietrich of Freiberg upheld a similar thesis; cf. ch. III, § 5.2. For a more Averroistic formulation of what according to Genua is essentially the same idea, see also p. 130ra (quoted above).

<sup>52</sup> *In de anima*, 148va; see 182ra (quoted above): according to Simplicius, the true species are the intelligibles. See also ch. I, § 4.1-2.

<sup>53</sup> *In de anima*, 150vb.

<sup>54</sup> *In de anima*, 151ra: “(...) quòd intellectus cum a se ipso perfecto fluxerit, in ignorantiam ac ineruditionem suiipsius, atque totius formalis substantiae dilabitur, ita ut indigeat perfici ab altero, & quamvis a se ipsa; tamen ut ab altero, propter lapsum; conversa deinde in substantiales rationes, quae in ipsa sunt, quaerit, & invenit: quatenus in ea ipsa aliunde inscribitur, perfecta evadit: & sic respectu sui perfectae ipsius, dicitur intellectus reminisci.”

<sup>55</sup> The species as latent content is described as “vera species”; cf. *In de anima*, 148va.

formarum illarum. quae verè sunt intellectuales. quare ab istis aliquo modo ascendens excitatus ad inquisitionem verarum formarum, ab ea substantia animae, quae manet, sive virtute cunitus.<sup>56</sup>

The species 'received' from the senses predispose the intellectual soul, and incite it to truly intellectual research<sup>57</sup>. Notice that Genua distinguishes between "real" reception and "intentional", or more precisely, "objective" reception<sup>58</sup>. Indeed, it is utterly unthinkable that phantasms would ever be able to reach up the level of the agent intellect.

After a detailed discussion of the concept of illumination in Latin, Arab and Greek commentators<sup>59</sup>, Genua concluded that an intellectual apprehension of natural reality does not presuppose that the (agent) intellect endows sensory representations with a capacity to move the (possible) intellect; it only means that the intellect projects itself onto the material world:

Intelligens materialia, circa ipsa operatur; non autem faciens aliquid in eis; neque ab illis patiens aliquid; sed per projectas, quae in eo sunt, causas, cognoscitivum actum illorum proiicit.<sup>60</sup>

Both nature and scope of human cognition are dominated by the agent intellect, which perfects the progressing intellect by virtue of its forms or species, the mental presence of which is compared to that of images in a mirror<sup>61</sup>. If there is a multiplication of species, then it can only be with regard to the senses<sup>62</sup>. The sensory images are just occasional causes for the acquisition of knowledge<sup>63</sup>.

<sup>56</sup> *In de anima*, 144va.

<sup>57</sup> See *In de anima*, 145rab: "Progressus haud à sensibilibus perficitur, sed in his, tanquam in extremis formarum vestigiis, insidet: indeque ad ipsarum formarum investigationem non sine quadam inclinationem in seipsum, excitatur."

<sup>58</sup> *In de anima*, 128rb.

<sup>59</sup> *In de anima*, 154r-55ra.

<sup>60</sup> *In de anima*, 155rb.

<sup>61</sup> *In de anima*, 144vb: "(...) & species tunc illae in intellectu sunt, ut imagines in speculo, scilicet in esse cognito: & rectè comparatur scienti; cum possit per illas habitus pro arbitrio in operationem exire." Cf. also Ficino's conception of innate "formulae", discussed in ch. VI, § 1.3. For a similar conception of the place of the agent intellect in the process of knowledge, see Dietrich of Freiberg, examined in ch. III, § 5.2.

<sup>62</sup> *In de anima*, 181vab; Genua appealed to Duns Scotus' *Ordinatio*, I, d. 3, q. 7, in *Opera omnia*, ed. C. Balic e.a., vol. III, Città del Vaticano 1954, 330-38.

<sup>63</sup> *In de anima*, 155rb: "(...) sic recta fuit Gandavensis opinio, quod intellectus agens non est, ut producat species illas in phantasia existentes intelligibiles; sed oc-

Hence, the intellect does not receive anything from the phantasms, nor does it endow them with a special capacity. For this reason the doctrines of the Latins, including Jandun, cannot be accepted<sup>64</sup>. The agent intellect does not generate any intelligible species on the basis of phantasms, but merely (re-)produces forms on its own account. These forms, which may also be called species, are similar in formal structure to the corresponding sensible images<sup>65</sup>. Genua led this view of knowledge acquisition as a wholly intramental process to its extreme conclusion: the only possible basis for our knowledge of the external world is self-cognition:

Et addit Averroes; quia intellectus agens nihil intelligit eorum, quae sunt hic; idest, non intelligit entia huius mundi sensibilia, ut scilicet intellectus possibilis recipiendo species; sed intelligit istas omnes causaliter, & eminenter; cum seipsum intelligat; & intelligendo se, intelligat istarum rerum omnium quidditates, sive rationes.<sup>66</sup>

As we have seen, the species which the possible intellect 'receives' do not lead to true knowledge. Their reception merely *occasions* the actual apprehension of material objects by the agent intellect, which contains the quidditative essences of sensible things "causaliter & eminenter" in its own structure<sup>67</sup>.

Analyzing the dependence of intellectual cognition on sensorial images, Genua came to the belief that Simplicius' noetics can be harmonized with Alexander's view of the possible intellect as preparation<sup>68</sup>. When Aristotle said that the possible intellect is

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casione cuiuscunque phantasmatis, intellectus agens in seipso possibili producat illius obiecti, uti est, notitiam."

<sup>64</sup> *In de anima*, 156rb-vb.

<sup>65</sup> *In de anima*, 155rb: "(...) quod intellectus agens; non est ad producendas species intelligibiles ex phantasmatis; sed ex progressa forma phantasmatis correspondente, ut dictum est". See also 156vb: "(...) ab illis excitatus (...) & ad se conversus recipit quidditates egressas illis correspondentes phantasmatis". The forms present in the agent intellect are called also ideas, cf. 155va.

<sup>66</sup> *In de anima*, 157ra.

<sup>67</sup> Elsewhere, Genua assigned different cognitive roles to "intellectus perfectus" and "intellectus progressus", namely, the cognition of indivisibles and discursive reasoning, respectively. Cf. *In de anima*, 163ra and 166ra. The background of this distinction is the theory of the three operations of the intellect.

<sup>68</sup> *In de anima*, 129vb: "neque ipse formas est; sed magis imperfectio cadens à forma, quare recte dicta fuit ab Alexandro praeparatio, quia, ut sic, mota a phantasmatis apta est participare formas omnes; quae in ea ipsa lucidissimae apparent".



“immixtus”, he did not mean that it is able to receive the intelligible species from the senses (as Thomas had thought), but only that the intellect (as “progressus”) is not mixed up with the forms which possesses the “intellectus manens”<sup>69</sup>.

Although the phantasms are only occasional stimuli, their role in acquiring actual intellectual knowledge is nonetheless crucial. Genua rejected the existence of an intellectual memory for intelligible species, because this would imply that the intellect, once it has known an object, would be stuck with it forever<sup>70</sup>. The mind’s dependence on phantasms expresses the *de facto* potentiality of the human “intellectus progressus”. The forms present in the latter can be actualized by the agent intellect only when the phantasy offers the corresponding occasion<sup>71</sup>.

In Genua’s cognitive psychology, the intelligible species served as the basis for the connection between the human soul and the separate intellect, as well as for our knowledge of the sensible world. Genua rejected the traditional view of the species as accidental representations originating from perceptual capacities. Since only innate contents (which may be characterized as species, notions, or ideas) ensure intellectual knowledge of material reality, self-knowledge is the source of all empirical knowledge. The role of the phantasms in cognition is nonetheless crucial. The mind needs to be incited to generate actual cognitive representations of material reality; moreover, there is no such thing as an intellectual memory. In sum, then, mental acts consist in the mind’s projecting itself onto sensible reality.

Marcantonio Genua took a special place in the Aristotelian psychological tradition, a position we may call sense-dependent nativism: cognitive acts express innate contents, but they occur only when triggered by sensory representations. The human mind grasps material reality by means of representations; these repre-

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<sup>69</sup> *In de anima*, 129vb.

<sup>70</sup> *In de anima*, 177vb.

<sup>71</sup> Kessler correctly sees in this view an anticipation of Suarez’s conception of “sympatheia”; see “The intellective soul”, 526-27. Yet, I think that the effective sources of Suarez’s doctrine were rather medieval and Renaissance Scholastics, such as Giles of Rome and Sylvester of Ferrara; see ch. X, § 1.6.

sentations are already present potentially, but they require corresponding phantasms to be actualized. This idea of the human mind as “applying itself” to the capacities of the body will return, in a different context, in Descartes’ psychology of the *Regulae* and the *Meditationes*<sup>72</sup>.

### 1.3. *Marc’Antonio Mocenigo*

Genua’s interpretation of Simplician psychology gave rise to a new trend in the Peripatetic psychology of his days, which set in even before his commentary was printed. The Venetian patrician Marc’Antonio Mocenigo may have attended Genua’s lectures in Padua in the 1540’s and 50’s<sup>73</sup>, as is strongly suggested by the Genuan drift of his *Paradoxa Theoremataque*. This work consists of 1334 theses derived from Aristotle’s philosophy, and was intended as the basis for public disputation at Venice and Padua<sup>74</sup>. In this erudite treatise, which may be compared to Pico’s *Conclusiones*, published half a century earlier, Mocenigo defended a number of positions that were heavily influenced by Simplicius and by other Greek commentators. Still, Mocenigo also retained certain basic tenets of Averroes’ psychology, in spite of the fact that he followed Simplicius’ reading of Aristotle’s *De anima*. He complicated his position even more by introducing some puzzling distinctions. Thus, he drew a distinction between true and false philosophical theories. Again, he distinguished between philosophy and “sanctissima lex”. Moreover, he did not rule out *a priori* that a true philosophical theory might contradict the “veritas rei”<sup>75</sup>. Mocenigo’s *Paradoxa* contain a discussion of intelligible species as well as a rather extensive discussion of sensible species. The analysis of the latter bears on his rejection of the intelligible species; hence, we shall also examine Mocenigo’s view of the sensible species.

<sup>72</sup> See ch. XI, § 1.1 and 3.

<sup>73</sup> Genua taught philosophy at the University of Padua from 1517.

<sup>74</sup> *De eo, quod est Paradoxa Theoremataque ex Aristotelis philosophia derumpta*, Venetiis 1559. For discussion, see Nardi, *Saggi*, 399.

<sup>75</sup> See *Paradoxa*, 81r (quoted below); cf. sectio II, n° 689, cited in Nardi, *Saggi*, 400.

Mocenigo's ample discussion of the nature and modalities of sensory perception testifies to his large erudition. He was acquainted not only with the Greek and Arabic commentaries on Aristotle, but also drew on a large number of other ancient authors, including Plato, Euclides, Plotinus, and Proclus. At the outset of his section on the "anima sensitiva", he rejected the notion of sensible species that was defended by almost all Latin authors. Surprisingly, Mocenigo (and many later schoolmen) appealed to Plotinus for a rejection of the sensible species<sup>76</sup>. The species doctrine, which he also attributed to Averroes, Alexander and John Philoponus, is a false opinion, and it is incompatible with genuinely Aristotelian principles<sup>77</sup>. As an alternative Mocenigo worked out a theory based on the dynamic articulation of five principles:

Nos igitur, ut quae vera Aristotelisque germana sit opinio manifestemus, altius quaedam repetere necessarium est, & quinque ad sensationem necessario concurrere dicimus, sensum, formam sensibilem, effigiem, sensiterium, & medium, (...).<sup>78</sup>

The sensible species derived from sensible reality is here replaced by an "effigies", which is produced by the sensitive soul whenever the sensible organ (called "sensorium") is moved by the sensible forms<sup>79</sup>. It was in terms of this new framework that Mocenigo developed a new interpretation of Aristotle's psychology of cognition<sup>80</sup>.

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<sup>76</sup> *Paradoxa*, 58v: "Veruntamen de hac non una, imo multiplices, variaeque, fuere hominum sententiae, ideoque ut Aristoteles facere consuevit singulae recensendae sunt. Latini namque à sensibili spetie, tanquam à causa effectrice sensationem fieri crediderunt, speciem sensibilem dico, non existentem in anima ut Plotinus asseruit, sed productam à forma extrinsecus sensibili." Cf. 73v-74r, for a discussion of Plotinus' doctrine of vision which excludes any medium. See also ch. I, § 2.

<sup>77</sup> *Paradoxa*, 58v-59r.

<sup>78</sup> *Paradoxa*, 59r.

<sup>79</sup> *Paradoxa*, 59r-v. For a distinction between "species" and "effigies", see Rudolphus Goclenius, *Lexicon philosophicum*, 1068-69a, discussed in ch. XII, § 4.1.

<sup>80</sup> I think that this construction, taken at face value, may indeed be a more faithful reconstruction of Aristotle's intentions in *De anima* II than the species doctrine. For discussion of Aristotle's conception of sensation and perception, see ch. I, § 1.3.

Mocenigo's analysis of the intelligible species, by contrast, did not rest on a similarly independent reading of texts from Aristotle and his commentators. His discussion of the intellective soul started with unequivocally rejecting Alexander and Averroes, and stating his purpose to be to follow the lines of Themistius, Plotinus, and Iamblichus<sup>81</sup>. Analogous to his earlier refutation of sensible species, Mocenigo then critically examined the doctrine of the Latins according to which the "intellectus possibilis" or "progressus" depends for its act on intelligible species produced by the agent intellect<sup>82</sup>. As is already clear from the terminology used here, Mocenigo's rejection of this doctrine was inspired by Simplicius. Indeed, like Simplicius and Genua, Mocenigo let the distinction between "intellectus progressus" and "manens" correspond to a classification of cognitive objects<sup>83</sup>.

Mocenigo then proceeded to give an extensive analysis of the various sorts of controversy to which the generation of these principles had led among advocates of the doctrine. According to Mocenigo, all the explanations given in this context are unacceptable ("falsissime"). Yet, this does not mean that he associated himself with the epistemology of medieval opponents of the species. Thus, he rejected Henry of Ghent's view that the intellect receives a "quidditas rei"<sup>84</sup>. Mocenigo submitted that the nativist reading of Aristotle is the genuine one, as had also been the view of Theophrastus and Themistius. This nativist position is not unconditionally true, however:

At nos cum Theoph. atque Them. veris atque legitimis Aristot. interpretibus qui licet philosophice, non tamen vere loquuntur, dicimus mentem humanam de novo aliquid non suscipere, sed rerum omnium in se rationes habere.<sup>85</sup>

The fact that Mocenigo regarded nativism as an acceptable philosophical theory of knowledge acquisition calls for some explana-

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<sup>81</sup> *Paradoxa*, 79v.

<sup>82</sup> *Paradoxa*, 80v: "Cum latinis igitur ferè omnibus minime sentimus, ad hoc ut intellectus hic possibilis, vel progressus intelligat opus esse ut species intelligibiles factas ab intellectu agente suscipiat."

<sup>83</sup> Cf. *Paradoxa*, 81r-v.

<sup>84</sup> *Paradoxa*, 80v.

<sup>85</sup> *Paradoxa*, 80v.

tion. His view of intellectual cognition as being based on ideas present in the human soul was obviously inspired by Simplicius:

Tam igitur cum progressus, quam cum in se manens, intellectus per suam substantiam, omnia intelligit, repraesentando, & referrendo ideas illas, quas ab externo secundum philosophos, (qui tamen in hoc falsum dicunt) habuit, & habebit (philosophice loquor) in sua substantia, & natura.<sup>86</sup>

It should be noticed, however, that even if nativism is held to be the true and only interpretation of Aristotle, this does not make it true *tout court*<sup>87</sup>.

Unlike Genua, Mocenigo eliminated the intelligible species in his interpretation of Peripatetic psychology, and he did not re-interpret them as innate contents latently present in the intellect. His noetics conceived of the agent and possible intellect as two moments of the self-same entity. The intellect is agent when it actualizes intelligibles from its own potentiality and then apprehends them. The intellect is a possible intellect whenever it is not capable of representing its own contents. In this scheme there is no possible use for intelligible species that somehow depend on sensorial images<sup>88</sup>.

Mocenigo's rejection of the species doctrine is remarkable for its classical and theological context (see the "sanctissima lex", for example). Defending a nativism of forms (albeit with strong reservations) as the only philosophically reasonable position with regard to knowledge acquisition, Mocenigo simply assumed as self-evident that the human mind can become aware of its own contents without occasional stimuli. Thus, the actualization of latent contents remains unexplained, for it is not made clear how, by what causes, and when these contents may be triggered.

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<sup>86</sup> *Paradoxa*, 81r.

<sup>87</sup> See also *Paradoxa*, p. 81r: "Dicimus id secundum philosophos dici, cum in rei veritate falsa sit, neque id credimus."

<sup>88</sup> *Paradoxa*, 81r-v.

#### 1.4. Antonio Polo

A straightforward Platonic interpretation of the intelligible species is found in the *Abbreviatio veritatis animae rationalis* by Antonio Polo<sup>89</sup>. In the 7th Book of this work the author raised the question, “An species intelligibiles sint necessariae ad intelligendum, & in intellectu concreatae”<sup>90</sup>.

It is clear from the outset that Polo viewed intelligible species as being just ideas. The human soul, he stated, knows “per proprias ideas et species”, which may be compared to colours that are visible only by virtue of the light:

Sic species intelligibiles, nisi illustrentur ab agente, non intelliguntur, & cum absque imaginatione intelligimus, tantum sufficit virtus intellectus agentis.<sup>91</sup>

In a similar context Polo pointed out that the role of the phantasms is conceivably restricted to the domain of information gathered by the various perceptual faculties. It is only logical that Polo explicitly denied that the phantasms are autonomously able to generate intellectual knowledge. More surprising is the choice of authors with whom Polo said to agree on this point: not only Themistius, Theophrastus and Avempace were mentioned here, but also Baconthorpe and Henry of Ghent. Thus, like Pomponazzi and Marcantonio Zimara before him, but also like Mocenigo, Polo regarded the first two as opponents of the species doctrine<sup>92</sup>.

Henry of Ghent’s notion of the illuminated phantasm was denounced as an unsatisfactory alternative to the intelligible species. Polo argued that sensory images are material entities, and hence are unable to determine or to influence the intellect; their function is only that of “excitantia”<sup>93</sup>. Indeed, only inborn intelligible

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<sup>89</sup> Antonio Polo, fl. ca. 1578; from Venice. For discussion, cf. Nardi, *Saggi*, 372.

<sup>90</sup> Antonius Polus, *Abbreviatio veritatis animae rationalis*, Venetiis 1578, 242.

<sup>91</sup> *Abbreviatio*, 242.

<sup>92</sup> *Abbreviatio*, 242; this enlarged the historical background of the conception of an ancient opposition to the species, recurring in the works of Spanish schoolmen; see ch. I, § 2.

<sup>93</sup> *Abbreviatio*, 243.

species are able to perfect the intellect<sup>94</sup>. Incited by the images produced by the senses, the human soul turns to (“recurrat ad”) the agent intellect:

(...) ut illuminet, & faciat actu speciem illam correspondentem idolo a sensibus sibi appresentato, & sic fit actu intelligibilis proprio lumine.<sup>95</sup>

The intellect does not receive any species; rather, it actualizes innate contents corresponding to the images which the senses present<sup>96</sup>. From this it follows that the doctrines of Thomas and Giles of Rome are unacceptable. The soul knows all things by virtue of its own powers, namely, on the basis of inborn species and a built-in active principle<sup>97</sup>.

Polo's attitude with regard to the intelligible species was typically that of the Neoplatonic who prefers to retain traditional concepts whenever they can be re-interpreted in his own terms. Thus, he identified the intelligible species with potentially or actually known ideas, and made the necessary adjustments in the traditional species doctrine. In particular, he needed to correct the view of species as endorsed by Thomas and Giles, who had claimed a causal role for sensory images in the generation of intellectual knowledge.

### 1.5. *Teofilo Zimara*

Like Genua and Mocenigo, also Teofilo Zimara<sup>98</sup>, son of the famous Marcantonio, was heavily influenced by Simplicius' reading

<sup>94</sup> *Abbreviatio*, 243: “perficitur, ergo a speciebus intelligibilibus, quas habet secum anima concreatas, cum tales sint immateriales, & ab immaterialibus immaterialia perfici debent.”

<sup>95</sup> *Abbreviatio*, 243; cf. 244. For a similar position, see Genua (above), and Suarez, examined in ch. X, § 1.6.

<sup>96</sup> As we have seen, Genua argued for a similar position; cf. *In de anima*, 155rb: “(...) quod intellectus agens; non est ad producendas species intelligibiles ex phantasmatibus; sed ex progressa forma phantasmatis correspondente, ut dictum est”. See also 156vb: “(...) ab illis excitatus (...) & ad se conversus recipit quidditates egressas illis correspondentes phantasmatibus”.

<sup>97</sup> *Abbreviatio*, 243-44.

<sup>98</sup> Teofilo Zimara, 1515/20 San Pietro in Galatina—1589 Lecce; son of Marcantonio Zimara; doctor in artibus et medicina; practised medicine in Lecce. For discussion, see Garin, *Storia della filosofia italiana*, vol. II, 573f, and Nardi, *Saggi*, 355-63.

of Aristotle's *De anima*<sup>99</sup>. Unlike his father and unlike Genua, however, he no longer endorsed Averroes' interpretation of Peripatetic psychology<sup>100</sup>. Instead he fostered the idea that Aristotle's psychology may be harmonized with Plato's. Teofilo believed that the Stagirite rejected neither Plato's theory of ideas nor his doctrine of reminiscence<sup>101</sup>. In the context of his epistemology and of his view of intelligible species, this conviction led Teofilo to a position that was generally similar to that of the authors examined earlier, but which deviated from it at particular points. Using the translation by Argyropoulos, Teofilo largely avoided the term "intelligible species", and rejected the epistemological views traditionally bound up with the species doctrine. His theory of intelligible forms may well be seen as an alternative for this doctrine, however, which is why I think it proper to discuss it here. The core of Teofilo's psychology of cognition consists of two parts, namely, (1) the Aristotelian notion of the fundamental potentiality of the intellect before the cognitive act, and (2) the rejection of any significant relation between phantasms and intelligibles.

Teofilo Zimara's lengthy discussions are often difficult to follow. His erudition apparently stood in the way of a clear and straightforward argumentation. He had a meandering and somewhat contrived style of reasoning, which we also find in his work on man's knowledge of the external world, for example in his interpretation of the potentiality of the intellect. Teofilo first established that the Aristotelian "pati" concerns the intellect only insofar as it directs itself towards the body<sup>102</sup>. Moreover, the intellect's potentiality consists in a receptivity with respect to intelligible forms<sup>103</sup>. Teofilo then raised the question whether the human intellect is potential with respect to accidental or substantial forms. First and foremost he remarked that accidental forms doubtlessly

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<sup>99</sup> Theophilus Zymara, *In Libros Tres Aristotelis de Anima Commentarij*, (...), Venetiis 1583.

<sup>100</sup> *In de anima*, 293rb-298vb; for discussion, see Nardi, *Saggi*, 356-362.

<sup>101</sup> Cf. *In de anima*, 15rab, 305va, 312rb-va, and 338va; see also Nardi, *Saggi*, 360-61.

<sup>102</sup> *In de anima*, 289rb.

<sup>103</sup> *In de anima*, 290ra.



depend on essential forms as their ontological ground<sup>104</sup>. Now, the “intellectus foras se porrigens” (that is, the potential, progressing intellect) does not know by virtue of a participation in the essential forms. Rather, it is directed towards the images in order to reach the knowledge of substances. This is sound procedure, for all sense-dependent species or images relate to the source from which they have sprung. Thus, sensible species direct the inquiring mind towards their origin<sup>105</sup>.

At this point of his discussion, Teofilo put in an unexpected objection: if the intellect cannot directly access the essential forms, then the presence of the intelligible forms in our soul seems vain. Yet, Simplicius said that the forms present in the soul are functional. Teofilo therefore felt confident to conclude that the notion of a potential intellect, spoiled of all forms, is meaningful only when this potentiality is restricted to the essential forms<sup>106</sup>. Indeed, it is evident that a potential intellect directed towards accidental forms cannot at the same time be influenced by innate forms, presuming that the latter are essential.

Whatever forms may be present in the potential or possible intellect, they are certainly not essential. Just like the sensibles are not present as such in the senses, so, too, the intelligibles *themselves* are not present in the potential intellect, “sed talia, id est, his similia”<sup>107</sup>. The comparison with the sensible soul may be carried even further: like the latter is superior to the sensibles, so the intellect is inferior to the intelligibles. Indeed, if the actual intellect turns to the external world and thus inevitably becomes potential,

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<sup>104</sup> This problematic is obviously connected to the issue of knowledge through species generated by sensory devices representing accidents, which in the Middle Ages was examined, among others, by Richard of Middleton and Thomas Sutton; cf. ch. III, § 4.2, and ch. IV, § 1.4, respectively.

<sup>105</sup> *In de anima*, 290rb: “Quippe species, imagoque omnis id repraesentare videtur, à quo manat, velut eius simulachrum, potentiaque cognitrix per eam ad rem ipsam se porrigit.”

<sup>106</sup> *In de anima*, 290rb-va.

<sup>107</sup> *In de anima*, 290vb; cf. p. 292vb: that the intellect does not coincide with the intelligibles before actually knowing them, does not entail that the possible intellect does not have a precise ontological status, nor that the intelligibles are lacking in any way whatsoever.

it necessarily leaves behind the intelligibles<sup>108</sup>. Here we see how unconditionally Teofilo endorsed Simplicius' noetics.

Following the Alexandrian Neoplatonic and his Renaissance disciples, Teofilo identified the agent and the possible intellect with the Simplician "intellectus manens", and "intellectus progrediens" or "procedens", respectively. This distinction corresponds not only to two types of cognitive objects (as had also been claimed by his predecessors), but also to two kinds of cognitive acts, named "intellectio manens" and "procedens", respectively. The first type of mental act concerns forms that are essentially present in the actual intellect, while the second type concerns forms that are present "in habitu" in the inferior intellect. These types of cognition enable the mind to grasp what transcends it "per exemplar", and to know the inferior world "per imagines"<sup>109</sup>.

If the intellect is not identical with the intelligible object before actually knowing it, this does not mean that the (possible) intellect is completely deprived of forms. The potential intellect is not a 'blank', but it possesses intelligible forms in an accidental state. These accidental forms spring from essential intelligibles, as Teofilo argued in his refutation of the classical doctrine of intelligible species:

Ex his patet Simplicium existimasse formas intelligibiles, quae in intellectu fiunt non esse qualitates, & accidentia, ut arbitrantur formas, sive species intelligibiles introducentes, sed substantias, ac praeterea phantasiam per imagines non movere intellectum materiale (ut Averroes putat) quoniam accidens principium formae substantialis, ipsius nimirum intelligibilis, esse nequit, sed praesentibus phantasiae simulachris in memoria, sive phantasia formas substantiales intelligibiles ab intellectu agente passivo infundi, atque hoc esse, quod ait Aristoteles intellectum in potentia ab intellectu agenti illustrari.<sup>110</sup>

The intelligible forms that occur in the knowing mind cannot be identified with accidents or qualities, as the advocates of intelli-

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<sup>108</sup> *In de anima*, 290vb: "Sanè intellectus in actu foras se promit, intelligibilia intus manent, (...)".

<sup>109</sup> *In de anima*, 308vb-309va.

<sup>110</sup> *In de anima*, 299va.

ble species had thought<sup>111</sup>. Nor is the phantasy capable of moving the (possible or material) intellect by means of images. Still, accidental forms are undeniably linked to substantial forms (“accidens principium formae substantialis”). For the generation of cognition, this means that the agent intellect infuses substantial intelligible forms in the possible intellect whenever corresponding images are present in phantasy or memory. Thus, Teofilo’s brand of Neoplatonic noetics led to a curious view of the illumination of the potential intellect, which was said to consist in the actualization of innate contents: we find ourselves again in a situation in which the intellect generates cognitive content “in presence” of causally inert phantasms<sup>112</sup>.

In accordance with his general outlook, Teofilo interpreted the classical topos of the soul as “locus formarum” in terms of the agent intellect possessing the forms in its own substance. The contents or intelligible forms “in habitu” present in the intellect derive from the essential forms contained (“insitas”) in the active intellect<sup>113</sup>. A pillar of Teofilo’s psychology is the claim that intellectual knowledge does not require a sense-dependent formal mediation. In a comment on the Aristotelian text, “Idem autem est scientia in actu, atque res”, Teofilo declined the need for (sensory) similitudes, arguing that the agent intellect possesses the ‘things themselves’, that is, the “ideae rerum”<sup>114</sup>. “Recentiores” who accept the intelligible species, so Teofilo observed, are surely aware of the fact that it is not the stone itself that is present in the soul, but only its form. Now, the potential presence of this form in the soul does not imply a dependence of intellective cognition on the

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<sup>111</sup> Elsewhere, Teofilo also rejected the doctrine, attributed to both Thomas and Averroes, that intelligible species are required for self-knowledge; see *In de anima*, 313vb-14ra.

<sup>112</sup> Cf. *In de anima*, 351va-352vb. Phantasms cannot move the intellect. Only in practical intellectual knowledge, their role is really significant. This position was typical for many Neoplatonics, also for Simplicius (see subsection 1.1). A similar position, though not couched in nativist terms, is found in many medieval Augustinian-inspired authors, such as Peter Olivi, Matthew of Acquasparta, Richard of Middleton, and Roger Marston, examined in ch. III, § 3.4 and § 4.1-3. Also Alexandrist authors endorsed similar positions, though differently argued for; see Castellani, analyzed in § 2.1.

<sup>113</sup> *In de anima*, 302vab. Bear in mind here that Teofilo used Argyropoulos’ translation of *De anima*.

<sup>114</sup> *In de anima*, 324rb-325vb.

sensible world. The form's virtual presence merely consists in its 'obscure', or as yet 'uncertified' existence in the mind<sup>115</sup>. More precisely, the forms in the soul are potential only with respect to their second act, not with respect to their first act. Thus, the soul contains the "scientia" in itself<sup>116</sup>.

If there are any such things as species, they are acceptable only as forms. Teofilo obviously preferred not to use the term "species" at all, considering the score of misunderstandings it gave rise to<sup>117</sup>. In point of fact, the term "species" are intimately connected to abstraction, whereas the "rationes rerum" are not<sup>118</sup>. Knowledge of material reality may be seen as abstraction, but only on condition that this abstraction is seen as an intra-mental contemplation, regarding natural forms insofar as they are detached from matter:

Formae vero cognitae ab intellectu aut suapte natura separatae sunt, cuiusmodi sunt intelligibilia, aut *ex aphaireseos*, id est, abstractione quatenus eas anima rationalis in se contemplando à materia quodammodo absolvit.<sup>119</sup>

The forms of extramental reality, whether of the realm inferior to the mind or of that transcending it, are present in the human soul as their "imagines" and "exemplaria", respectively<sup>120</sup>.

The Aristotelian dictum "non sine phantasmatibus" is explained as bearing only on the knowledge of the forms of sensible reality, which are the proper object of the potential intellect. However, no phantasms are required for preserving the intelligible species in their being, as Averroes and Genua had thought. That would be simply absurd, considering that the mind does not receive species from the sensibles or from the phantasms<sup>121</sup>. Thus, the psychology

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<sup>115</sup> *In de anima*, 368va: "Quibus intelligendis nosce oportet Simplicii, atque Academicorum opinione animam in potentia esse eas formas, quas intelligit, sive sentit, non quòd actu insitas, sibique essentiales non habeat, sed quod in ea delitescant, atque obscurae, incertaeque sunt."

<sup>116</sup> *In de anima*, 368vb.

<sup>117</sup> *In de anima*, 368vab.

<sup>118</sup> *In de anima*, 369va.

<sup>119</sup> *In de anima*, 369vb.

<sup>120</sup> *In de anima*, 369vb; on p. 309va, Teofilo observed that we know extramental reality, whether separate or material, by means of "exemplaria" and "imagines", respectively; cf. *supra*.

<sup>121</sup> *In de anima*, 372ra.

of Teofilo Zimara constituted a more radical break with sense-dependent cognition than Genua's.

### 1.6. *Concluding remark*

The garden variety of nativist positions on knowledge acquisition, as developed in the mid-sixteenth century, marked the conceptual transition between classical (Neo-)platonist psychology and the new theories of ideas as developed in the late-sixteenth and seventeenth centuries. The authors discussed here still endorsed a Platonic form of nativism with regard to mental content. Yet, some of them expressed strong reservations on this point, as the theological remarks of Mocenigo shows, while others, such as Genua, tried to give novel accounts of the role of sensory representations in the generation of mental acts.

Genua's sense-dependent nativism echoed essential aspects of the noetics of Dietrich of Freiberg, while anticipating certain points in Suarez' view of the production of intelligible species<sup>122</sup>. Polo's identification of species and idea paved the way for incorporating Peripatetic notions into early modern, non-Aristotelian approaches to mental representation, such as Giordano Bruno's. Teofilo Zimara presumed the mere presence of phantasms to be a sufficient condition for triggering the mind's latent contents, and thus anticipated in a way Descartes' type of dispositional nativism.

## § 2. REACTIONS TO SIMPLICIAN AVERROISM

After Vernia's and Nifo's eclectic application of Simplician notions to Peripatetic psychology and noetics, Marcantonio Genua gave the signal for a new trend in Renaissance cognitive psychology. Even though his attempted harmonisation of Simplicius with Averroes was not universally accepted, his teachings at the University of Padua were responsible for rekindling the interest in the work of later Neoplatonic commentators, as testified by the work of Mocenigo and Teofilo Zimara. It did not take long for counter-movements to set in, however. Giulio Castellani, for example (who

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<sup>122</sup> See ch. III, § 5.2, and ch. X, § 1.6, respectively.

like Simone Porzio was an outspoken admirer of Alexander of Aphrodisias) devoted the first pages of his *De humano intellectu* to a sharp critique of Simplicius' interpretation of Peripatetic psychology<sup>123</sup>. It is very likely that he became acquainted with Simplicius' interpretation in Padua, probably by attending Genua's lectures; this is borne out by his conviction that the ancient master defended the uniqueness of the human intellect<sup>124</sup>.

Castellani's attack on Simplicius' interpretation, though carried on in later years by Piccolomini<sup>125</sup>, did not stifle the interest in attempts to bring Platonic and Aristotelian psychology into harmony. The majority of works aiming for this concordia were written from a Platonic point of view, thus enforcing their fifteenth-century heritage. One consequence of this was that these works paid no particular attention to the problem of intelligible species<sup>126</sup>. Conversely, works in which Peripatetic philosophy did occupy a more prominent place, did not pursue the concordia with the same eagerness.

A relatively novel form of eclectic psychology may be found in the erudite commentary on *De anima* by Antonio Montecatini. Though Montecatini was generally well-disposed towards Neoplatonic commentators, he was also rather critical of Simplicius' psychological thought, and he often even made straightforwardly naturalistic claims. That profound knowledge of Simplicius' commentary did not automatically lead to unconditional surrender to his ideas was demonstrated very vividly by the *De anima* commentary of Lucillo Filalteo, who translated, among other things, Simplicius' commentary on the *Physics*. Filalteo's epistemology showed a return to the idea that the causal connection

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<sup>123</sup> In *De Humano Intellectu libri tres*, Bononiae 1561, on p. 2v, 5v-7r, and 30v, he criticized Simplicius. He professed his admiration for Alexander on p. 31v. See also Nardi, *Saggi*, 384-6.

<sup>124</sup> *De humano intellectu*, 7r.

<sup>125</sup> See ch. IX, § 1.3.

<sup>126</sup> Cf. Bernardino Donati, *De platonicae atque aristotelicae Philosophiae differentia Libellus*, Parisiis 1541, who, on f. 8r-v and 13v, assimilated the species to the Platonic idea, conceived as a kind of hypostatised logical concept. See also Gabriele Buratelli, *Praecipuarum controversiarum Aristotelis et Platonis conciliatio*, Venetijs 1573, 137v; Jacques Charpentier, *Platonis cum Aristotele in universa philosophia comparatio*, Parisiis 1573; Jacobus Mazonius, *In universam Platonis, et Aristotelis Philosophiam Praeludia* (...), Venetijs 1597.

between sensory images and intellectual knowledge is essential for the generation of mental representations.

### 2.1. *Giulio Castellani*

The detailed refutation of Academic scepticism by Giulio Castellani<sup>127</sup> in *Adversus Marci Tullii Ciceronis academicae quaestiones disputatio* demonstrates the author's broad interest for epistemological questions<sup>128</sup>. Embracing the Alexandrist interpretation of Peripatetic psychology, Castellani argued that sensibility and intellectual knowledge are necessarily linked<sup>129</sup>. He endorsed the species doctrine without reservations: the human intellect has knowledge by virtue of the fact that it receives species. Notice, however, that Castellani tended to identify the species with intelligible forms<sup>130</sup>. A more detailed account of his cognitive psychology may be gleaned from his various reasonings in *De humano intellectu*, which was chiefly an analysis of the nature and role of the agent and the possible intellect.

In conformity with Alexander of Aphrodisias, Castellani identified the agent intellect with God. He found it necessary, however, to distance himself from a contemporary follower of the ancient master, namely, Simone Porzio<sup>131</sup>. Like Theophrastus and many medieval authors, Castellani was particularly interested in the ontological status of the possible intellect<sup>132</sup>. Although the human intellect is "infima intelligentiarum", hence characterized by pure potentiality, Castellani stressed the fact that it is substantial in na-

<sup>127</sup> Giulio Castellani, 1528 Faenza—1586 Roma; nephew of Pier Nicola Castellani; studied at the University of Ferrara (under Vincenzo Maggi), Bologna and Padua; 1561, tutor to sons of the Duke of Tuscany; secretary to Duke of Mantua; 1577, called to teach philosophy at the "Sapienza" in Rome.

<sup>128</sup> Published in Bologna 1558; for discussion of this attack on scepticism "more Peripatetico", see Ch.B. Schmitt, "Giulio Castellani (1538-1586): A sixteenth-century opponent of scepticism", in *Journal of the History of Philosophy* 5(1967), 15-39; idem, *Cicero scepticus. A Study of the Influence of the Academica in the Renaissance*, The Hague 1972, pp. 109-133.

<sup>129</sup> This view was espoused in *De humano intellectu*, Bononiae 1561, as well as in *Academicarum quaestiones*, 39-40; see also Schmitt, *Cicero scepticus*, p. 118.

<sup>130</sup> *De humano intellectu*, 29rv; cf. 30r and 34v.

<sup>131</sup> For the identification of God with the agent intellect, see *De humano intellectu*, 47r and 70r; his polemics with Porzio's thought can be found, for example, on ff. 2r, 58v and 70v.

<sup>132</sup> See, inter alia, ch. I, § 2, ch. II, § 1.5, ch. III, § 3.3, 4.2, and 5.1.

ture. Here, too, Porzio was criticized, because he allegedly degraded the possible intellect to the status of an accidental entity<sup>133</sup>. Castellani thought of all the intellects between the divine and the human as some kind of mixture of act and potentiality. The potentiality that is characteristic of the intermediate intelligences is not a “*potentia logica*”, but a “*potestas, quae praeter logicam necessario poni debet in intelligentiis, quae aliud extra se contemplantur*”<sup>134</sup>. Thus, the intellects situated under God are endowed with a real power, because they contemplate things external to themselves. Castellani presumed that the same is true of the human intellect as well. Emphasizing the substantial nature of the possible intellect, he ended up with a naturalistic epistemology to explain the latter’s effective cognitive role.

Through a contemplation of the phantasms, the human mind perceives the forms of natural things conveyed by them. The intellect is actualized by the intelligible forms, but it does not preserve them<sup>135</sup>. Initially, the intelligible forms were also called “species” by Castellani<sup>136</sup>. He later described the intelligible form as “*universale physicum*”, which he distinguished from the “*universale logicum*” or second intention<sup>137</sup>. Following the medieval Scholastic tradition, Castellani distinguished between three operations of the intellect, namely, simple apprehension, judgment, and discursive reasoning. The simple apprehension takes place in an indivisible instant, but it is still an event in time<sup>138</sup>. Castellani here rejected the view that cognition consists in a discontinuous

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<sup>133</sup> *De humano intellectu*, 31v.

<sup>134</sup> *De humano intellectu*, 32r.

<sup>135</sup> *De humano intellectu*, 33v-35r.

<sup>136</sup> *De humano intellectu*, 29r-30r. For the assimilation of species to (natural) forms, see also the contemporary Andrea Camutius, *De humano intellectu libri quatuor*, Papiæ 1564, who on p. 23v speaks of “*species immersas materiae*”.

<sup>137</sup> *De humano intellectu*, 36r-v. See Giordano Bruno’s polemics against a conception of nature as “*universale logicum*”, in *Ars memoriae*, in Giordano Bruno, *De umbris idearum*, ed. R. Sturlese, Firenze 1991, p. 70.

<sup>138</sup> *De humano intellectu*, 40r: “*Nemini autem mirum videri debet, quòd naturalis generatio fiat in instanti, atque intelligentia nostra, quae spiritualis est quaedam generatio, necessario aliquid temporis postulet: quoniam in intellectu nostro, & caeteris cognitione viribus praeditis, praeter illam primam imaginum, specierumque productionem, quae fit in instanti, iudicium deinde & cognitio obiecti reperitur, quae perfici in temporis momento nequeunt*”; cf. 37v. Kessler, “The intellective soul”, observes on p. 522, that “(...) Castellani reconstructed intellection as a temporal and therefore natural process”.



series of indivisible moments, each the contemplation of a single concept. This very same view of knowledge as consisting in a series of isolated acts had earlier been suggested by his own rejection of an intellectual memory<sup>139</sup>. It is vital for the Alexandrist frame of mind to see mental acts as processes that take place in time, for otherwise the intellection would belong to the separate agent intellect rather than to individual human beings.

The purpose of 'saving' cognition as a human act also underlies the analysis of the relation between agent intellect and sensory images. Castellani assigned two operations to the agent intellect, namely, self-knowledge and the illumination of phantasms<sup>140</sup>. By virtue of the latter activity, the agent intellect is the principal cause of intellection<sup>141</sup>. The separate intellect does not do anything with or in the phantasm. Castellani observed that the illumination by the agent intellect consists in its "sola praesentia". By this presence the sensory representations are detached from their material conditions, and they become different in nature, that is, they become immaterial and intelligible<sup>142</sup>. The illuminated phantasm incites the human intellect to grasp the intelligible object:

(...) excitat intellectum nostrum, huncque deducit ad actum, qui deinde sic à phantasmate commotus vi & natura propria rem percipit intelligibilem.<sup>143</sup>

This view of the cognitive process seems to have no use for intelligible species acting as go-betweens. Indeed, where Castellani was speaking of a reception of species on these pages, he assimilated them to intelligible forms<sup>144</sup>. Moreover, in a later chapter

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<sup>139</sup> *De humano intellectu*, 34v-35r; cf. 39v.

<sup>140</sup> Cf. *De humano intellectu*, 70r-v.

<sup>141</sup> *De humano intellectu*, 68r.

<sup>142</sup> *De humano intellectu*, 45r: "(...) eodem sanè modo intellectus Agens universalem formam in phantasmate à singularium conditionibus adumbratam suo illustrans splendore, idque sola praesentia praestans, eam minime gignit, sed solùm intelligibilem efficit, estque ut habitus quidam phantasmatis, qui non verè agit, sed est solùm agendi ratio, (...)". See also 70r: "(...) quamquam intellectus Agens, quem Deum asserimus, in nobis inest, suique praesentia phantasmata illuminat".

<sup>143</sup> *De humano intellectu*, 45r-v. Notice that Castellani used the term "perceive" for the intellectual act; also Descartes would use "perceptio" for intellectual apprehension (see ch. XI, § 1.1-2). Rather surprisingly, on the basis of this passage in Castellani, Kessler, "The intellectual soul", 523, concludes that the possible intellect deals actively with the illuminated phantasm.

<sup>144</sup> *De humano intellectu*, 45v.

Castellani expressly stated that the illumination of the phantasms is not a kind of cognitive grasp (“notio”) of the phantasm by the agent intellect, nor does it bring about the mental act:

(...) sed nos illud asserimus, illuminationem phantasmatum non esse eorum notionem, nec media eius fieri intellectione.<sup>145</sup>

Castellani also rejected the idea that the phantasm, once illuminated as “intelligibile in actu”, introduces the intelligible form in the intellect. The intelligible form arises from the potentiality of the possible intellect itself. Here Castellani associated himself, implicitly and somewhat surprisingly<sup>146</sup>, with a mild or dispositional form of nativism that was also held by various medieval masters: in the presence of the illuminated phantasm an intelligible form is produced ‘from’ the potentiality of the intellect<sup>147</sup>. As a matter of fact, Castellani’s view of the intellectual act is remarkably similar to the position of Godfrey of Fontaines<sup>148</sup>.

This mild form of nativism seems to be in blatant contradiction with Castellani’s naturalism. In particular, the role of the phantasm in the production of intellective cognition, so prominent at first, now seems to fall back to the margin. It is important to bear in mind, however, that a similar ambivalence with regard to the role of the phantasms and the latent presence of intelligible forms in the intellect was already found in Aristotle<sup>149</sup>. More specifically, Castellani’s position on the generation of intelligible forms ‘from’ the possible intellect must be seen in the light of his view of the human mind as a real, substantial capacity, which is more than just an empty container that is waiting to be filled from without. Once the intellectual soul is stirred by the illuminated phantasm, a form arises in it, or, more precisely, the intellect comes to grasp an intelligible form that it already ‘possessed’ virtually.

<sup>145</sup> *De humano intellectu*, 70v. This passage possibly contains an implicit critique of the position of Nifo c.s. regarding the designation of the “notio” as the result of the operation of the agent intellect regarding the phantasms.

<sup>146</sup> This thesis seems incompatible with an earlier passage, where Castellani argued for the (potential) presence of the (intelligible) forms in the phantasms (*De humano intellectu*, 33v).

<sup>147</sup> *De humano intellectu*, 71v; cf. the positions of Godfrey of Fontaines (ch. III, § 3.3) and Richard of Middletown (ch. III, § 4.2).

<sup>148</sup> For Godfrey of Fontaines, see ch. III, § 3.3; cf. already Porzio (ch. VII, § 4.2).

<sup>149</sup> See ch. I, § 1.3.

Castellani's cognitive psychology was marked by the contrasting tendencies that inhere in the Alexandrian conception of a divine intellect processing singular, accidental sensory representations. These latent contradictions come to the fore when an attempt is made to explain the acquisition of knowledge. Alexander had given a naturalistic account of perception and knowledge, which presupposed, however, the intervention of a separate agent intellect. Castellani sought to explain how this separate intellect can connect to the sensory representational devices. In the end, he manoeuvred himself into a position that was very similar to that of medieval opponents of the intelligible species, such that for the generation of intellectual knowledge only a pure presence of the agent intellect is required. Assisted 'at a distance' by the agent intellect, the phantasms incite the possible intellect to its immanent act. When he described the operation of the agent intellect in these terms, Castellani was apparently well aware of the fact that this *de facto* ruled out the abstraction of forms or species (terms that he actually used interchangeably). Indeed, on this point he endorsed a view that had earlier been held by authors such as Godfrey of Fontaines, such that the generation of intelligible forms is actually the actualization of forms potentially present in the possible intellect. Naturalism was thus combined with a mild form of innatism<sup>150</sup>. There is a close connection between this view and the equation of species and forms. Species, that is, mental representations, may be thought of as being generated by the mind, but forms, whether they exist potentially or actually, must simply arise and be grasped. The human intellect may come to grasp the intelligible forms, but it cannot produce them *ex novo*, for that is the prerogative of the agent intellect. When Ch.B. Schmitt in his study on Ciceronian scepticism of the Renaissance emphasized Castellani's physiological and sensationalist approach in cognitive psychology<sup>151</sup>, he told only one half of the story. His account took

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<sup>150</sup> This kind of nativism is implicit in Aristotle's view that the intelligibles do not exist outside the intellect; see ch. I, § 1.3.

<sup>151</sup> See *Cicero scepticus*, 129: Castellani pointed to the physiological, sensationalistic approach which psychology would be taking in future centuries. *Idem*, 131: "(...) in Castellani (...) I think that we can find some of the roots of the seven-

insufficient notice of Castellani's view of the origin of known species or intelligible forms from the possible intellect. By contrast, I think that Castellani's sensationalism and naturalism in psychology cannot be seen in isolation from his moderate innatism, determined essentially by his Alexandrism and by his assimilation of species to forms.

## 2.2. *Lucillo Filalteo*

Lucillo Filalteo, a student of Marcantonio Zimara, substantially contributed to the translation of Greek commentaries on Aristotle<sup>152</sup>. Although he is bound to have had a more than superficial knowledge of Simplicius' writings, the latter's characteristic views are almost completely absent from Filalteo's commentary on *De anima*. Like many Renaissance authors around the turn of the fifteenth and sixteenth century, such as Vernia and Nifo, Filalteo openly thought of Averroes as the "corruptor" of Aristotelian thought<sup>153</sup>.

Filalteo's views concerning the need for intelligible species bear some resemblance to the positions of medieval masters of arts, whose reflection on the generation of cognition was inspired by Roger Bacon's theory of multiplication<sup>154</sup>. Filalteo believed that mental acts depend essentially on the sensible forms causing an "intellectilis species" in the intellect<sup>155</sup>. The chain of "species impressae", originating from the external senses and passing through the internal senses, leads up to phantasms and "cogitabilia", which

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teenth-century empiricism of Bacon, Gassendi, and Locke"; p. 132: Castellani's movement in the direction of empiricism brought him into proximity with the ancient Atomist school, which would exert a distinct influence on seventeenth-century empiricist psychology and epistemology.

<sup>152</sup> Lucillo Filalteo, ca. 1510 Brescia—1578 Turin; first studies in Venice; until 1527 studied under Marcantonio Zimara at the University of Padua; 1528-1535, studied at the University of Bologna; 1535, doctor there; then until 1546 physician to the Marchese del Vasto, Milan; 1543, published his translation of Simplicius' commentary on *Physics* (Venice); 1544, published his translation of Alexander's *De sensibus* commentary (Venice); in the same year, he published his translation of Philoponus' commentary on the *Prior Analytics*; 1546-1565, professor of philosophy and medicine, Pavia; 1565-1578, Turin.

<sup>153</sup> See already Thomas, *De unitate intellectus*.

<sup>154</sup> See ch. III, § 2.2; for Roger Bacon, see ch. II, § 2.3.

<sup>155</sup> *In libros tres Aristotelis De Anima Commentaria absolutissima*, Taurini 1579, 355.

are stored in memory<sup>156</sup>. The agent intellect isolates a “communis natura” from these effects of sense perception<sup>157</sup>. Subsequently, the “communis natura” is impressed onto the material intellect as an intellectual species:

Unde apparet quid sit species intellectilis cum sit imago, & similitudo universalis formae communis existentis in singularibus, vel illa materia spiritualis, & abstracta opera intellectus agentis impressiva intellectus materialis tamquam quaedam eius perfectio & qualitas efficiens intellectionem, (...).<sup>158</sup>

The intellectual species is the “causa proxima” of the intellectual act<sup>159</sup>. Indeed, this species is the first thing received by the intellect<sup>160</sup>.

Filalteo’s position came very close to the positive, non-problematic interpretation of the doctrine of intelligible species that had been current among Parisian masters of arts immediately after the death of Thomas<sup>161</sup>. Endorsing the terminology of Bacon’s multiplication theory, Filalteo pressed the need for mental processing of sensory information, which enables the intellect to effectively grasp the universals.

### 2.3. Antonio Montecatini

Antonio Montecatini, a competent philologist, did not finish the task he had set for himself, namely, to work out an extensive and well-founded “concordia” between the philosophies of Plato and Aristotle. His later career as a diplomat did not let him time to carry out the entire program<sup>162</sup>. His commentary on *De anima*

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<sup>156</sup> *In de anima commentaria*, 356.

<sup>157</sup> See also *In de anima commentaria*, 360: the cognitive act is conditioned by the agent intellect, which elevates sensory images to another level.

<sup>158</sup> *In de anima commentaria*, 356-57. For the “communis natura” as object of intellectual knowledge, see also the position of Sylvester of Ferrara (ch. VII, § 2.2).

<sup>159</sup> *In de anima commentaria*, 356.

<sup>160</sup> *In de anima commentaria*, 355.

<sup>161</sup> See ch. III, § 2.1-2.

<sup>162</sup> Antonio Montecatini, 1537 Ferrara—1599; studied Latin, Greek, and Hebrew; studied philosophy at the University of Ferrara; 1562, doctor artium there; published in 1562 his *Academica theoremata secundum peripateticae philosophiae ordinem distincta*; 1563, lector of philosophy and astrology there; then also secretary and diplomat in the service of Duke Alfonso II d’Este (1533-1597); 1594, published his paraphrase of Plato’s *Republic*; 1597, published his

makes frequent reference to Simplicius, but it is only rarely that he examined his views in any detail, and he often overtly criticized his opinions<sup>163</sup>. In general, Montecatini followed the line of Buccaferrea and Vimercato with regard to the intelligible species.

Montecatini based his commentary strictly on the Greek text of *De anima*, and identified the species with "notio", that is, with the Aristotelian *noema*<sup>164</sup>. He believed that the species are similitudes of objects, which, detached by the agent intellect, move the possible intellect:

Detrahi haec, seiungique dicebantur, quom vi effectricis mentis, & quasi lumine sibi impartito simplices naturae, & essentiae, ex quibus composita illa constabant, in id evadebant, ut per se singulae sine alijs, cum quibus erant implicitae, movere possent mentem materiam; atque in ea sui similitudines, quae species intellectuales, ac notiones vocantur.<sup>165</sup>

Against Simplicius, Montecatini defended the latent presence of intelligible species or notions in the phantasms:

Haec igitur sic collustrata phantasmata, vel potius quae in phantasmatis lucent species intellectuales mentem materiale in se conversam movent, ducuntque à potestate ad actum non perperione propriè dicta, alteratione, aut ullo omnino genere physici motus, sed longè diverso; excitatis in ea formis, hoc est notionibus rerum, quae intelligi debent.<sup>166</sup>

In this passage, the distinction between species or notion and (intelligible) form is not drawn with great precision<sup>167</sup>. Also elsewhere, Montecatini assimilated the species to the notion, to *to ti en*

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paraphrase of Plato's *Laws*; after 1597 in disgrace. For his concordistic projects, see Nardi, *Saggi*, 421.

<sup>163</sup> Antonius Montecatinus, *In eam partem iii. libri Aristotelis de anima, quae est De Mente Humana lectura*, Ferrariae 1576, 337, 474 and *passim*. He also referred sometimes to his *Concordia*, see pp. 37 and 272; cf. also Nardi, *Saggi*, 422-3.

<sup>164</sup> *In partem iii. de anima*, pp. 314, 319, 348, 372, and 474.

<sup>165</sup> *In partem iii. de anima*, 314. Cf. 348-49: notions and intelligible species are produced by the object in the mind. See also Buccaferrea, *Lectiones in tertium librum Aristotelis de Anima*, 124vb: "phantasmata producant notionem cum praesentia intellectus agentis."

<sup>166</sup> *In partem iii. de anima*, 393; cf. 432-33: "Sunt tamen & in phantasmatis, formisque sensibilibus aliquo modo intellectibilia, & intellectuales species"; and p. 470.

<sup>167</sup> See also *In partem iii. de anima*, 432-433; 470

*einai* or “quidditas”<sup>168</sup>, and to form<sup>169</sup>. He presumably believed that the intelligible species as similitude of the formal structure (form or “quidditas”) of reality is the content (“notio”) of our mental acts<sup>170</sup>. Though he mostly did not draw a sharp line between form and species, Montecatini elsewhere (and in a different context) distinguished between (real) forms and (received) species:

Reales eas vocamus, formas potius, quàm species, quae veram subsistentiam habent, determinantes materiam, in qua sunt, eique tribuentes sui modo definitionem, ac nomen. Spiritales dicimus illas, & libentius species, quàm formas, quae à veris, & realibus in aliena materia excitatae sunt, cui nec nomen tribuere, nec definitionem possunt.<sup>171</sup>

Thus, we see that Montecatini did not completely abandon the instrumental function of the received species or notions<sup>172</sup>. As we may gather from the above passage, this function is no longer understood in physical terms. The species does not move the intellect physically but “sine perpessione”, that is, their reception by the mind consists in a generation of notions<sup>173</sup>.

Montecatini definitely declared himself an enemy of any nativist view of the species, that is, of the contents of human cognition<sup>174</sup>. This makes it all the more regrettable that he was unable to finish

<sup>168</sup> See *In partem iii. de anima*, 372-73; cf. pp. 348 and 461.

<sup>169</sup> See *In partem iii. de anima*, 396 and 461.

<sup>170</sup> Antoine Arnauld would later develop a similar position, defining the idea as mental act with representational content; cf. ch. XIII, § 1.2. Already Lefèvre d'Étaples argued for a strong relation between mental act, representation, and content; see ch. VI, § 1.4.

<sup>171</sup> *In partem iii. de anima*, 468-69.

<sup>172</sup> *In partem iii. de anima*, 397: “hinc propè iam prospicimus, à formis intellectibus, quae in sensibilibus sunt, phantasmatum, & rerum exterarum, mentem possibilem moveri; fierique, ac suscipere ex hoc motu illas ipsas formas, quibus demum intelligat, idest quibus iudicet de omnibus rebus.” Cf. p. 432, for the instrumental role of the notions. See also p. 447: “Per species enim, quas notiones vocamus, homines intelligunt, non per phantasmata”; pp. 451-52: “Duo sunt intellectionis nostrae tanquam instrumenta; unum, per quod, ipsae species intellectiles, sive notiones susceptae in mente materiali, per quas intelligimus; alterum, cum quo, ipsa phantasmata, eas notiones excitantia, ac suscitantia, sine quibus non intelligimus.”

<sup>173</sup> *In partem iii. de anima*, 393 (quoted above) and p. 433. See also the position of Simone Porzio, who emphasized that terms like “motor, motum, & materia” can be used only “metaphorice” with respect to the relation between agent intellect and phantasms; cf. ch. VII, § 4.2.

<sup>174</sup> See, for example, *In partem iii. de anima*, 474-75, regarding the *prota noemata*, and p. 462: the species are not eternal, but generated.

his project of establishing a philosophical “concordia” between Plato and Aristotle. Most concordist projects of the fifteenth and sixteenth century embraced nativist positions. From this point of view, Montecatini’s Concordia would have been a uniquely interesting effort toward harmonizing Plato and Aristotle from a Peripatetic perspective.

### § 3. THE INTELLIGIBLE SPECIES IN THE NEW PHILOSOPHY

In an earlier chapter, we have seen that during the Renaissance the notion of intelligible species was also discussed by Platonic and other non-Aristotelian authors, such as Cusanus, Ficino, Bovelles, and Fracastoro. However, for their terminology as well as for the conceptual framework in terms of which they discussed the problem of mental representation, these authors (with the obvious exception of Cusanus) depended heavily on tradition. In the second half of the sixteenth century, by contrast, a number of novel and original approaches in the psychology of cognition were formulated as an alternative to the traditional ones—Aristotelian, Scholastic, or Platonic. Characteristic of this so-called New Philosophy is its radically new attitude towards classical authorities, exemplified in particular by Bernardino Telesio and Giordano Bruno.

In a series of sharp polemics with Aristotle, and even more with his followers, Telesio developed a system of ideas that was doubtless influenced by the naturalistic aspects of Peripatetic philosophy<sup>175</sup>, but that was marked by a stronger materialistic tendency deriving at least in part from the Stoics and from Galenic medicine<sup>176</sup>. In *De rerum natura iuxta propria principia*, Telesio

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<sup>175</sup> It is well known that Telesio exploited the naturalistic tendencies in Aristotle. Already Francis Bacon pointed out that Telesio “turned the weapons of the Peripatetics against themselves”; see *The Philosophical Works*, eds. J. Spedding, R.L. Ellis, and D.D. Heath, vol. IV, 359. See also F. Fiorentino, *Bernardino Telesio, ossia Studi storici su l’idea della natura nel Risorgimento Italiano*, vol. I, Firenze 1872, 225; K. Schuhmann, “Hobbes and Telesio”, in *Hobbes Studies* 1(1988), 109-133, on p. 111, note 13.

<sup>176</sup> In particular, the doctrine of the *pneuma*. However, see also Ficino, Agrippa, Cardano, and Bruno, for the Neoplatonic and Hermetic doctrine of the “spiritus” as vehicle of the human soul. The notion of spirit would later return in another



did not explicitly dwell on the issue of intelligible species<sup>177</sup>. Yet, his views on intellectual knowledge, which he presented as an alternative to the despicable psychology of the Peripatetics, are of interest to us for a number of reasons. In the first place, Telesio believed that intellectual cognition is based on a perceived similitude. Now, “similitudo” was one of the prevalent qualifications for the intelligible species. Telesio did not see this similitude as a mental representation of an external object, defining it rather as a feature common to similar objects. In spite of this fundamental difference, Telesio’s perceived similitude may be regarded as a kind of “quo”, namely, inasmuch as this formal feature of material objects has an instrumental role in the cognitive process. Both the intelligible species and the perceived similitude were designed to ground our knowledge of universals. In my opinion, this justifies a comparison between Telesio’s view of knowledge acquisition and traditional Scholastic approaches. Another motive for examining Telesio’s epistemology here lies in the fact that it would later inspire Tommaso Campanella’s refutation of the species doctrine around the turn of the century<sup>178</sup>—which is also why the position of this Calabrian friar will be discussed in the present chapter instead of in the next part.

The critical attitude towards tradition reached a climax in the polemical writings of Giordano Bruno. Bruno did not reject the notion of intentional species, however. As we shall see, he endorsed it in a modified form, adapting it to the purposes of his own discussions.

Scipio Agnello was one of the last representatives of the concordistic trend. His explicit identification of intelligible species and

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guise (namely, in the notion of animal spirits) in the physiological accounts of perception given by Descartes, Hobbes, and Gassendi; cf. ch. XI.

<sup>177</sup> Moreover, notice that Jacobus Antonius Marta in his *Pugnaculum Aristotelis adversus Principia Bernardini Telesii*, Romae 1587, did not refer to Telesio as challenging the species doctrine. In this context, it is interesting to note that Marta was the editor of Simone Porzio’s *Quaestio de spetiebus intelligibilibus*; for discussion, see ch. VII, § 4.2.

<sup>178</sup> It cannot be excluded that Telesio’s views also inspired other 17th-century authors, such as Hobbes; for a suggestive study of Hobbes’ possible relation to Telesio, cf. Schuhmann, “Telesio and Hobbes”.

ideas<sup>179</sup> was a landmark in the conceptual transition toward the modern non-Aristotelian philosophy of mental representation.

### 3.1. *Introduction—Patrizi*

Strictly speaking, Bruno and Campanella were the only non-Aristotelian philosophers of the late sixteenth century who addressed the issue of the intelligible species in one way or the other. This is not to say that other non-Aristotelian writers had nothing interesting to say in the field of cognitive psychology, however. They just did not address the problem of mental representation in a way that was significantly related to the controversy on intelligible species. Francesco Patrizi belonged to this second category of writers<sup>180</sup>.

Patrizi had a sharp eye for the intentional aspects of human knowledge<sup>181</sup>. Like most of the Platonic inspired authors, he was a strenuous defender of nativism<sup>182</sup>. Remarkably, however, he no longer subscribed to one of the pillars of Neoplatonic epistemology, namely, the convertibility of being and intelligibility. He no longer thought of the object of intellectual cognition as being as such ("ipsum ens"), but only as its "claritudo"<sup>183</sup>, thus foreshadow-

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<sup>179</sup> Also Ficino assimilated the species to idea; see ch. VI, § 1.3. See also Genua, Porzio and others.

<sup>180</sup> Francesco Patrizi, 1529 Cherso (Dalmatia)—1597 Rome; 1542, began study of accounting and grammar, Venice; 1544-45, while abroad on business, studied Greek, Ingolstadt; 1547-1554, studied philosophy (under Genua) and medicine at the University of Padua; 1554-1577, travelled extensively; 1577-1591, professor of Platonic philosophy at the University of Ferrara; 1591-1597, professor of Platonic philosophy at the "Sapienza" in Rome.

<sup>181</sup> Franciscus Patritius, *Nova universa philosophia*, Ferrariae 1591, section *Panarchias, de rerum principiis primis*, l. XV "De intellectu", 31va: "Cognitio igitur quid nam est sui natura? Videtur sanè, non aliud quid esse, quam conversio, & intensio cognoscentis in cognoscibile, studio veritatis adipiscendae."

<sup>182</sup> *Nova universa philosophia*, 52rb: "Deus ergo intellectus conditor, dum animum conderet omnes suas in eum transfudit proprietates. (...) Factus igitur est anima, rerum universitas tota, sed animaria, sicuti intellectus universitas fuerat intellectualis (...)"

<sup>183</sup> *Nova universa philosophia*, 31vb: "At quid nam est hoc cognoscibile? Ens forte est. Sed forsitan non qua ens, cognoscibile est. Ens enim qua ens, tantum est. Cognoscibile vero, in ente, forte aliud est. (...) Ens est hypothesis sive substantia. Cognoscibile vero est eius claritudo. (...) Intellectus ergo, non cognoscit ipsum ens, sed eius efflorescentem claritatem. Vel etiam ens cognoscit, sed per eius claritatem, & per id quod in ente est cognoscibile."

ing a theme that later became dear to the Jesuits and to Descartes<sup>184</sup>. This “claritudo” he described as an emanated quality, the effective grasp of which precedes the knowledge of being:

An vero, verum fuerit, hanc claritudinem, effluxum atque emanationem quamdam esse ab ipso ente. A quo ita effluit, sicuti a sole lumen hoc circumterraneum effluit. Et sicuti quis, solem ipsum intuens per claritudinem suam non superficiale tantum intuetur, sed totam, quae in toto est sole perspicit. (...) Sic & in ipso ente, naturalis, atque essentialis est ei claritudo. Et per hanc a mente prius cognitam, ipsum ens intelligitur.<sup>185</sup>

To the extent that the “claritudo” mediates our knowledge of being, it may be seen as an oblique variation on the species doctrine, namely, insofar as the latter is understood as being emanated or multiplied.

### 3.2. Bernardino Telesio

The psychological and epistemological speculations of Telesio<sup>186</sup> were fuelled by the conviction that the traditional schemes of Aristotelian philosophy no longer fit the more recent findings of anatomy and physiology<sup>187</sup>. He therefore sought to construct a more adequate alternative to Peripatetic philosophy and science. This project can only succeed, so he claimed, if we investigate nature on the basis of principles that are demonstrably present in the things themselves. Hence, natural reality must be approached by means of those cognitive faculties that are most appropriate to it: the senses. The basis of Telesio’s psychology of cognition was therefore the absolute primacy of sensation; all other types of cognition ultimately depend on direct perception. Notice that

<sup>184</sup> For the dictum “clare & distincte” in 17th-century Jesuit epistemological literature, see ch. X, § 2.1.2-3, and § 2.2.2.

<sup>185</sup> *Nova universa philosophia*, 31vb-32ra.

<sup>186</sup> Bernardino Telesio, Cosenza, 1509—1588; for biographical information, see F. Fiorentino, *Bernardino Telesio, ossia Studi storici su l'idea della natura nel Risorgimento Italiano*, vol. I, Firenze 1872.

<sup>187</sup> An impression of Telesio as scientist is offered by his *Varii de naturalibus rebus libelli* (Venice 1590), critical edition with an Italian translation by L. De Franco, Firenze 1980; see also his optics in *De rerum natura iuxta propria principia*, liber VII.17-33. Of the *De rerum natura* I have used the edition of L. De Franco, vol. I (books I-III) and vol. II (books IV-VI), Cosenza 1965-1974, and vol. III (books VII-IX), Firenze 1976.

Telesio (in contrast to the Peripatetics) assigned to the senses an unequivocally *cognitive* role.

Telesio's naturalistic program took sensation to be a merely material process involving only material agents, namely, the sensible objects and the spirit. The spirit is common to man and all other animals; it constitutes our sensible soul and is understood as an imperceptibly thin and fiery body<sup>188</sup>. The human soul can perceive sensible objects only when it is able to assimilate them; therefore it must be corporeal<sup>189</sup>. The spirit (which Telesio also described as seed-soul<sup>190</sup>) is distinguished from the immaterial, rational soul, which is a divine creature added to spirit as its form<sup>191</sup>. This divine soul is unable to ratiocinate without the sensible soul, however, and its contribution to the knowledge of natural reality, though valuable, is essentially inferior to that of sense perception<sup>192</sup>.

The spirit 'feels' and consequently perceives, by virtue of the fact that it can be subject to sensible alterations<sup>193</sup>. Sensation presupposes that the spirit is set in motion by an object. Aristotle was right when he observed that in sensation the human soul somehow becomes the things<sup>194</sup>. Yet, this does not mean that sense perception consists in a merely passive reception of forms: the soul is a material entity, so Telesio argued, and therefore it cannot be purely potential<sup>195</sup>. Rather, by the stimulus of the things the soul is pushed to its own operations<sup>196</sup>. Thus, perception consists in an interaction between spirit and external stimuli: it is the result of

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<sup>188</sup> See *De rerum natura*, VII.4, 12f. See also V.3, 216: the spirit as bearer of sensibility and movement; V.10, 260: spirit as "anima sentiens"; V.5, 226: the spirit is present principally in the nervous system, and in particular in the brain in order to guarantee the unity of the perception (V.12, 274-76).

<sup>189</sup> *De rerum natura*, V.37, 428. See also the positions of Epicurus, the Stoics, and Gassendi, examined in ch. I, § 1.4, and ch. XI, § 3, respectively. Gassendi's argumentation would later be refuted by Amauld, in *Des vraies et des fausses idées*, Paris 1986 (first edition Paris 1683), ch. 4, p. 36.

<sup>190</sup> See, for example *De rerum natura*, V.34-37, 404f.

<sup>191</sup> See *De rerum natura*, V.3, 220, for the unity of the seed-soul and the divine soul. In V.50, 446-48, the divine soul is seen as "forma spiritus"; see also VIII.15, 232.

<sup>192</sup> *De rerum natura*, VIII.3, 172, and c. 11-12, 208-220.

<sup>193</sup> *De rerum natura*, VII.2, 4; cf. VIII.21, 266.

<sup>194</sup> *De rerum natura*, VII. 7, 24.

<sup>195</sup> *De rerum natura*, VIII.21, 268-72.

<sup>196</sup> *De rerum natura*, VII.7, 28.

the impact of external objects touching the spirit in the extreme parts of the body, traditionally identified as sense organs. Considering that they are based on a real tactile “passio”, all senses (with the exception of hearing) may be reduced to touch, which therefore has primacy over the other senses<sup>197</sup>.

All other types of cognition, including imagination, memory, and discursive reasoning or intellective thinking, depend on sensation, to which they are essentially inferior<sup>198</sup>. Intellection, for example, consists in the recollection of past motions in the spirit. Telesio therefore described it as “commemoratio”, “existimatio”<sup>199</sup>, or “recolitio passionum”<sup>200</sup>. The value of intellectual thought lies in its possibility to inform the spirit about things that are distant, absent or partly unknown. When something is perceived incompletely, this incomplete cognition may be completed by comparing it to previous perceptions<sup>201</sup>. Thus, Telesio’s theory was not so much that perception is cognitively penetrable, but rather that all intellectual thought is radically dependent on perception: intellective knowledge of the material world is a mere substitute for actual sensation, and therefore it is inferior to sense<sup>202</sup>.

Telesio regarded cognition as an “opus naturae” that depends either on actual sensation or on similitude<sup>203</sup>. Intellective cogni-

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<sup>197</sup> *De rerum natura*, VII. 8, 30. See, in general, VII. 8-33. For discussion, see F. Fiorentino, *Bernardino Telesio*, vol. I, 290-91. In *De sensu rerum et magia* and in his *Physiologia*, Campanella would resume Telesio’s doctrine of the spirit, endowing matter as such with sense. It is quite probable that Hobbes referred to Telesio and Campanella, in *English Works*, vol. I, 393: “I know there have been philosophers, and those learned men, who have maintained that all bodies are endued with sense.” See Schuhmann, “Telesio and Hobbes”, 130, who, in note 41, refers to A. Levi, *La filosofia di Tommaso Hobbes*, Milano-Genova-Roma-Napoli 1929, p. 55. See also *infra*.

<sup>198</sup> *De rerum natura*, VIII.2-3, 164-172; VIII.9, 200f. The context of this valuation is the refutation of the Peripatetic doctrine of the hierarchy of cognitive faculties, from pp. 190ff.

<sup>199</sup> *De rerum natura*, VIII.3, 170

<sup>200</sup> *De rerum natura*, VIII.28, 294.

<sup>201</sup> *De rerum natura*, VIII.3, 164-172.

<sup>202</sup> *De rerum natura*, VIII.14, 228: the knowledge of things partly unknown is based on sense, and therefore also the perfection of this knowledge.

<sup>203</sup> *De rerum natura*, IX.30 446: “Praeterea ut experientiae etiam sit opus rerum cognitio, at quin magis naturae sit, ambigi ceret non potest.” Characterizing cognition as the work of nature, Telesio reverses the medieval and Renaissance dictum “opus naturae est opus intelligentiae”. See, for example, Giordano Bruno,

tion, insofar as it is a reconstruction of those parts of the cognitive objects that are unknown or obscurely perceived, is based on a "similitudo sensu percepta"<sup>204</sup>. At this point a comparison between Telesio's view and Scholastic psychology becomes interesting, considering the fact that the intelligible species, too, was generally seen as a similitudo of the thing represented by it. With regard to the nature and function of Scholastic species and Telesian similitudo, there are differences as well as similarities. I shall first take a look at the differences, which are more evident.

Ever since the thirteenth century, in particular since Thomas, the intelligible species was generally seen as a similitudo of the essence of the sensible object, and as a mediating factor between the immaterial intellect and sensible reality. Many philosophers argued that the species serves a crucial function in bringing about the mental act. In the context of Neoplatonic, hierarchical conceptions of reality, the species (being both sense-dependent and immaterial) serves as a warrant for the connection between the levels of perception and cognition. It represents the individual essence of a sensible thing that is universally predicable. Though singular in being, the species is universal "in repraesentando".

As we have seen, Telesio believed that the soul comes to grasp natural reality by means of physical interaction. The divine, immaterial soul, too, cannot access natural reality without the aid of the spirit<sup>205</sup>. Accordingly, universal knowledge is not the result or final act of a structurally hierarchical process, that is to say, it does not consist in the gradual abstraction of similitudes or species. Indeed, an important part of book VIII of *De rerum natura* is taken up by a detailed refutation of the Peripatetic doctrine of hi-

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*Sigillus sigillorum*, in *Opera latine conscripta*, eds. F. Fiorentino and others, Napoli 1879-1891, vol. II.ii, 199, and, in general, J.A. Weisheipl, "The axiom *Opus naturae est opus intelligentiae* and its origins", in *Albertus Magnus and the Sciences*, ed. J.A. Weisheipl, Toronto 1980, 441-463.

<sup>204</sup> *De rerum natura*, VIII.3, 170: "Itaque intellectionis cujusvis principium similitudo est sensu percepta"; see also c. 7, 186-88; c. 8, 192; c. 17, 246.

<sup>205</sup> *De rerum natura*, V.6, 184; VIII. 15, 232-4, 236; c. 28, 294-6: "Nam etsi, ut dictum est, non spiritus ipse in hominibus, sed substantia a Deo immissa intelligit, quoniam, dum in corpore ea inhabitat, agentibus naturis et corruptioni omnino obnoxio, spiritus ministerio atque opera intelligit; itaque ea modo intelligit, quae e rerum sensu perceptarum similitudine intelligi possunt, et quae spiritus ei intelligenda veluti offert aut ministrat." Cf. also V.2-3.

erarchically conceived cognitive faculties<sup>206</sup>. This means that no ambivalent “similitudo dissimilis” between sensible reality, senses and intellect is required<sup>207</sup>. The notion “similitudo” is no longer needed to connect hierarchically distinct levels. In Telesio’s cognitive psychology, “similitudo” was not the mental representation of an individual essence, but rather a common feature of a plurality of perceived sensible objects<sup>208</sup>.

Most Scholastic and Renaissance Aristotelians believed that universal knowledge is based on the cognitive grasp of the essence of sensible particulars abstracted from its material and individual conditions. In Telesio, the similitudo on which universal knowledge is based is the straightforward result of an ontologically univocal process of comparison or generalisation with regard to a plurality of objects<sup>209</sup>. As a common characteristic, however, the perceived similitudo remains an instrumental factor. Like the similitudo of Peripatetic psychology manifested the intelligible essence, so the Telesian similitudo is the basis of our knowledge of absent things. This feature connects Telesio’s similitudo with the intentional species.

At colligens perraro perque aegre decipitur, quod nec obscura confusaque recolit, neque sensui occultum quod est, similitudine inquiri, obscura interdum remotaque in rebus, quae non semper eodem eveniunt modo; sed similia in singularibus dudum manifesta que percepta colligit modo; quae igitur tantum ponit, quod sentit vel

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<sup>206</sup> *De rerum natura*, VIII.16-20. According to Telesio, a possible distinction between the cognitive faculties should be grounded in an essential distinction between their objects, not in different ways of perceiving them; cf. VIII.16, 240: “Non modus scilicet, quo res cognoscuntur, sed ipsae intuendae sunt res”; c. 20, 262: “Non scilicet a passionis perceptionisve diversitate (...), sed a rerum, quae percipiuntur, diversitate animae dissimilitudo declaranda Aristoteli erat.” Thus, as regards the knowledge of natural reality, there can be no essential difference between sense and intellect. See also *De rerum natura*, IX.34, 470.

<sup>207</sup> Only as “similitudo dissimilis”, the species are capable to connect the ontologically different levels of material reality, the senses, and the immaterial intellect.

<sup>208</sup> Telesio’s view of the knowledge of universals also resembled the epistemology of Alhazen, who postulated a mutual interdependence of perception and knowledge; see ch. I, § 3.1. Moreover, it foreshadowed Gassendi’s doctrine of similarity as the foundation of universals, as well as later developments in empiricism.

<sup>209</sup> See also the first attempts of Pomponazzi and Porzio to reform the notion of universal in the sense of a product of generalization; cf. ch. VII, § 1.1 and § 4.2. Cf. also P.O. Kristeller, “Telesio”, in *Eight Philosophers of the Italian Renaissance*, Stanford 1964, 102.

quod dudum sensit. Perraro itidem perque aegre quae necessario et quae semper eodem modo fiunt intelligit, ubi similitudine intelligit certa propinquaue.<sup>210</sup>

As an instrument, the perceived similitude bears on the emanated or abstracted similitude that was postulated by Peripatetics as the vehicle of mental content. In this sense, the perceived similitude was Telesio's alternative for the formal principle of intellectual cognition. Although Telesio's similitude was fundamentally different in nature, in function it remained closely linked to the intelligible species. Hence, we may say that it substituted the species as the principle of universal knowledge.

### 3.3. *Giordano Bruno*

Giordano Bruno's<sup>211</sup> polemics with Aristotelian philosophy were no less fierce than Telesio's. His criticism was directed mainly at Peripatetic physics and cosmology. Unlike Telesio, he made no pretence to formulate a radically new approach to the problems of knowledge. In his psychology and epistemology, Bruno borrowed views from all the traditional schools, generally modifying them to fit the purposes of the context of discussion<sup>212</sup>. This also holds good for the species doctrine.

<sup>210</sup> *De rerum natura*, VIII.16, 246-248. Cf. the strictly mnemonic function of the species in Olivi and Gregory of Rimini (ch. III, § 3.3, and ch. IV, § 3.4, respectively).

<sup>211</sup> Giordano Bruno, 1548 Nola—1600 Rome; studied philosophy and theology at the monastery of San Domenico Maggiore in Naples; in 1576 he fled to avoid a trial for heresy and wandered for 15 years through many European states; after traveling through northern Italy, in 1579 he vainly sought refuge in Geneva; he commented upon Aristotle's *De anima* at the University of Toulouse from 1579 to 1581; published his first writings in Paris between 1582-83; published in London his Italian dialogues, 1584-85; upon returning to Paris in 1586, he advanced a series of criticisms against Aristotle's philosophy, and was forced to leave the city; traveled through Germany till 1592; invited to Venice by the patrician Giovanni Mocenigo, he was betrayed by his host and in 1592 given over to the Inquisition; accused of heresy and incarcerated in Venice, then in Rome, he refused to retract his teachings and was burnt at the stake in the Roman Campo dei Fiori at 17 February, 1600. I have used the following editions of the works of Giordano Bruno: *Opera latine conscripta*, eds. F. Fiorentino and others, Napoli 1879-1891; *La cena de le ceneri*, ed. G. Aquilecchia, Torino 1955; *De la causa, principio et uno*, ed. G. Aquilecchia, Torino 1973; *Dialoghi italiani*, ed. G. Aquilecchia, Firenze 1985<sup>3</sup>; *De umbris idearum*, ed. R. Sturlese, Firenze 1991.

<sup>212</sup> See my *Il problema della conoscenza in Giordano Bruno*, Napoli 1988, "Introduzione"; and P.R. Blum, "Giordano Bruno, Matthias Aquarius und die



Bruno elaborated upon the traditional notion of species in a number of ways. Thus, he was familiar with the notion of species as multiplied in the medium and the senses: in his mnemotecnica and magical works, he applied this notion in terms of the multiplication theory. He also knew the Thomistic views on formal mediation in intellectual knowledge. Moreover, in many of his writings there are traces of the Platonic conception of species, as endorsed by Ficino, for example. Indeed, Bruno often spoke of the intelligible species as the content of mental acts, thus assimilating it to the Platonic idea. Although it is true that he sometimes treated the senses with condescension, he did not systematically reject the positive contribution of sense perception to the generation of intellectual knowledge. In this respect, then, he differed from Platonists such as Ficino.

Bruno developed his cognitive psychology in the framework of what is called the theory of the three worlds: God, the infinite universe or nature, and the human soul<sup>213</sup>. In this construction the contents of the human soul relate to the formal structure of natural reality and to the latter's origin<sup>214</sup>. More precisely, human knowledge represents the "corpus idearum" at a mental level<sup>215</sup>. At this

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eklektische Scholastik", in *Archiv für Geschichte der Philosophie* 72(1990), 275-300.

<sup>213</sup> See *Sigillus*, 164-65, where the three worlds are defined as "Deus" (or "mundus supremus" or "fons idearum"), "mundus ideatus", and "mundus contemplativus", respectively; cf. also *De la causa, principio et uno*, 15 and 69.

<sup>214</sup> Cf. *De umbris idearum*, ed. R. Sturlese, Firenze 1991, intentio xxx, 43-44: "Analogiam enim quandam admittunt methaphysica, physica, et logica seu ante naturalia, naturalia, & rationalia. Sicut verum, imago, & umbra. Caeterum idea in mente divina est in actu toto simul et unico. (...) In natura per vestigii modum quasi per impressionem. In intentione, et ratione per umbrae modum."

<sup>215</sup> *De imaginum compositione*, 94: "Quae sane species ante naturalia appellantur idea, in naturalibus forma sive vestigium idearum, in postnaturalibus ratio seu intentio, quae in primam atque secundam distinguitur, quam nos aliquando idearum umbram consuevimus appellare"; *idem*, 97: "Sicut enim nostrae intentiones habent originem a rebus naturalibus, quibus non existentibus et ipsae non essent, velut nullo existente corpore nulla esset umbra; ita res ipsae naturales, mundus nempe physicus nequaquam esse posset, si metaphysicus ille, nempe idea portans omnia, ex actu mentis et voluntatis divinae se ipsam communicantis non praeexistet"; *Theses de magia*, 463: "(...) ut autem est species abstracta et separata materiae secundum actum cognitionis sensitivae vel rationalis, sic perficitur tertium ideae genus quod est causatum a rebus naturalibus, quae dependet ab illis sicut se-

point Bruno used the Thomistic doctrine of cognitive species in various ways, adapting it to his purpose. Thus, in *De umbris idearum* (1582) he described the species as follows:

Per speciem quae est in intellectu, melius aliquid apprehenditur, quam per speciem quae est in physico subiecto, quia est inmaterialior. Similiter melius cognoscitur aliquid per speciem quae est in mente divina, quam per ipsam eius essentiam cognosci possit. Duo requiruntur ad speciem quae est medium cognoscendi: repraesentatio rei cognitae, quae convenit secundum propinquitatem ad cognoscibile, et esse spirituale, & inmaterialiale secundum quod habet esse in cognoscente.<sup>216</sup>

In this almost literal quotation from Thomas' *De veritate*<sup>217</sup>, the species is described as a formal principle, which has a function in knowledge acquisition, and which is present in God, nature and the human mind. Bruno characterized the (cognitive) species as "repraesentatio", and assigned to it an "esse spirituale". These are both traditional qualifications<sup>218</sup>. Elsewhere, I have shown that in *De umbris* the nature and function of the ideal shadow are modelled on the traditional intelligible species, which Bruno referred to in the above passage<sup>219</sup>. Indeed, the series "verum-imago-umbra" in *De umbris* corresponds to "idea-res-species"<sup>220</sup>. Both the intelligible species and the ideal shadows correspond as similitudes to the cognitive object<sup>221</sup>, and they are mental items connecting the mind to the formal structure of the world<sup>222</sup>. This resemblance between intelligible species and ideal shadow may be discerned in

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cundum genus a primo." For a similar view, see Charles de Bovelles, *Liber de intellectu*, 10r and 11v.

<sup>216</sup> *De umbris*, ed. cit., conc. xxvi, 59.

<sup>217</sup> Thomas Aquinas, *De veritate*, q. 3, a. 1, ad 2, duly reported by Sturlese in *De umbris*, p. 59.

<sup>218</sup> For the Stoic and Arabic background of the "esse spirituale" of species, cf. Thomas Aquinas, *Sentencia libri de anima*, in *Opera omnia*, ed. Leonina, vol. XLV.1, ed. R.A. Gauthier, Roma-Paris 1984, p. 128, note, and p. 169.

<sup>219</sup> See my *Il problema della conoscenza in Giordano Bruno*, cap. I. See also *De imaginum compositione*, 94, quoted supra. Another important source of the notion of ideal shadow is the Ficinian "formula innata"; see also ch. VI, § 1.3.

<sup>220</sup> *De umbris*, 44 and 52.

<sup>221</sup> *De umbris*, int. xxi, 39.

<sup>222</sup> *De umbris*, conc. xi, 52 and xxviii, 60, describe the products of the human mind as "species" and "umbrae ideales", respectively.

other works as well<sup>223</sup>. Also the following passage from *De umbris* should be read in this light:

Porro quid dicimus de idealibus umbris. Ipsas nec substantias esse intelligas, nec accidentia, sed quasdam substantiarum, et accidentium notiones.<sup>224</sup>

Bruno here described the ideal shadow as notion, referring implicitly to the discussion on the species' ontological status. This testifies to his interest in Peripatetic disputes on cognitive psychology. Indeed, "notio" was developed by Agostino Nifo and other Aristotelians as the only reasonable interpretation of the traditional species, because the identification of species and notion steered clear of the problems of a "tertium quid" between cognitive object and knowing mind<sup>225</sup>.

Bruno returned to the doctrine of species in a subsequent work, *Sigillus sigillorum* (1583), which is about the unity of the soul. In this context Bruno concentrated on the ascent of the soul, and he largely disqualified the role of sense perception and sensible species in the cognitive process<sup>226</sup>. The intelligible species are seen as acquired mental contents which are functional in pursuing man's final aim in cognitive effort, namely, beatitude<sup>227</sup>. Similarly, in *De la causa, principio et uno* (1584), the human mind attempts to fathom the vastness of infinite reality through the production of

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<sup>223</sup> Cf. *De imaginum compositione*, 98, where the species is qualified as "umbra".

<sup>224</sup> *De umbris*, int. xxii, 40. For a similar definition of the Stoic cognitive impression, see Diogenes Laertius, *Lives*, VII.61. Already Abelard (ch. II, § 1.1) and Peter of Spain (ch. II, § 1.6) used similar expressions to characterize the mental similitudes and the cognitive species, respectively. Cf. also the fifteenth-century author John of Malinas, *Tractatus de homine*, 454: "Relinquitur ergo, quod forma huiusmodi non est proprie substantia vel accidens, sed utriusque species, notio vel imago."

<sup>225</sup> See ch. VI, § 3, and ch. VII, § 3.2.

<sup>226</sup> *Sigillus*, 171-72: "(...) caveamus ne animus a sensibilibus speciebus illectus, ita sui in ipsis fixationem faciat, ut intelligibilis vitae privetur delitiis (...) Haud enim quod concipi debet de veritate rerum, ab ulla sensibili specie satis exprimi potest, sed veluti per nutum suis accidentibus se nobis essentia rerum insinuat."

<sup>227</sup> *Sigillus*, 211-12: "Intelligibiles tandem species sunt, quibus discursione deposita, actu uno possidemus omnia, beati vivimus, aeternam mentis intelligentiam imitatur. (...) Ad ea igitur atria per intelligibiles promovemur, in quibus plus unico attactu comprehendimus, quam innumeris actibus alibi attingeremus."

rational or intelligible species<sup>228</sup>. In this work, however, Bruno argued that the intellect will never be able by finite cognitive means to gain full-blown knowledge of the overall unity of things, be it divine or natural<sup>229</sup>.

In *De gli eroici furori* (1585), reflecting on the bounds of human knowledge, Bruno delineated in more detail the relation between the intellect and its cognitive means. Like all natural processes, cognition proceeds through "media"<sup>230</sup>. As transpires from the course of the dialogue, human cognition is marked by a gradual ascent, and it is bound to the use of its proper means, which are species or shadows<sup>231</sup>. For example, the relation between the human mind and the first truth is not direct, but mediated by species<sup>232</sup>. Since a direct grasp of the most perfect object (God) is unattainable for the soul in its terrestrial state, the prime aim of our cognitive efforts is to form an intelligible species of it<sup>233</sup>. The final aim of human knowledge was elsewhere described by Bruno

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<sup>228</sup> *De la causa*, 113: "(...) perché l'intelletto quando vuole intendere, gli fia mestiero di formar la specie intelligibile, di assomigliarsi, conmesurarsi, et ugualarsi a quella [i.e., all'assolutissima potenza]." See also *De la causa*, 67.

<sup>229</sup> *De la causa*, 64f.

<sup>230</sup> See *De la causa*, 151: "Prima dunque voglio che notiate essere una e medesima scala, per la quale la natura scende alla produzion de le cose, e l'intelletto ascende alla cognizion de quelle; e che l'uno e l'altra da l'unità procede all'unità, passando per la moltitudine de mezzi." Cf. *De umbris*, 32.

<sup>231</sup> Connected with this idea is the doctrine of the hierarchy of species: superior intelligences know by means of less, but more encompassing, species than inferior intelligences. This conception is based on *Liber de causis*, prop. IV and X; Bruno probably derived it from Thomas, however; cf. *Summa contra Gentiles*, II, c. 96, 1814, and c. 98, 1836. Cf. *De umbris*, 31, *De la causa*, 154; and *De gli eroici furori*, in *Dialoghi italiani*, 1060. For discussion, see my *Il problema della conoscenza in Giordano Bruno*, cap. V, p. 308f.

<sup>232</sup> *De gli eroici*, 991.

<sup>233</sup> *De gli eroici*, 995-96: "*Cicada*. Il divo e vivo oggetto, ch'ei dice è la specie intelligibile più alta della divinità; e non è qualche corporal bellezza che gli adombrasse il pensiero, come appare in superficie del senso? *Tansillo*. Vero, perché nessuna cosa sensibile, né la specie di quella, può inalzarsi a tanta dignitate. *Cicada*. Come dunque fa menzione di quella specie per oggetto, se, come mi pare, il vero oggetto è la divinità istessa? *Tansillo*. La è oggetto finale, ultimo e perfettissimo, non già in questo stato dove non possemo veder Dio se non come in ombra e specchio; e però non ne può essere oggetto se non in qualche similitudine; non tale qual possa esser astratta ed acquistata da bellezza ed eccellenza corporea per virtù del senso; ma per qual può esser formata nella mente per virtù de l'intelletto."

as the “copulatio” with the separate substances through the formation of intelligible species<sup>234</sup>.

Elsewhere in *De gli eroici furori*, in a passage that is relevant for Bruno’s doctrinal sources as well as for the general tendency of his cognitive psychology, Bruno referred to the generation and reception of intelligible species by the human mind:

Intendo, perché forma le specie intelligibili a suo modo e le proporziona alla sua capacità, perché son ricevute a modo de chi le riceve.<sup>235</sup>

Intelligible species are a product of the human mind, but they are also received: the concepts of “formare” and “ricevere” are mutually interdependent. It is very likely that this view was inspired by Scholastic cognitive psychology, which had claimed that the intelligible species are produced by the agent intellect and received by the possible intellect<sup>236</sup>.

Also elsewhere Bruno referred to the Aristotelian view of the potentiality of the intellect. The latter is all the intelligibles “in attitudine”, which means that it is related to its objects, although this relation is not direct<sup>237</sup>. Indeed, the intellect knows the intelligible object exclusively by way of intelligible species. From other writings one may gather that the species form part of a cosmic metabolism: they are either the product of a superior illumination or formed by the human mind in its speculation on natural reality<sup>238</sup>. The intelligible species are hierarchically

<sup>234</sup> *De gli eroici*, 998; the copulation with the separate substances is a well-known doctrine developed by various Arabic authors and their Latin followers; for discussion, cf. my “Motivi peripatetici nella gnoseologia bruniana dei dialoghi italiani”, in *Verifiche* 18(1989), 367-399.

<sup>235</sup> *De gli eroici*, 1007.

<sup>236</sup> Indeed, according to Thomas, the species is both a product of our mind and received as “creatum”, namely insofar as it is offered to us through the sensible things and thus reducible to its origin: God. See ch. II, § 3.6.

<sup>237</sup> *De gli eroici*, 1017.

<sup>238</sup> Cf. *Ars memoriae*, 91-92: “Anima clarior divinis Ideis magis exposita intentius obiectorum formas suscipit: quamadmodum qui acutioris visus est, facilius aptiusque discernit. (...) Harum quidem specierum aditum in intellectum potius crediderim immediate fieri per conversionem ad lumen illud quod agit in nobis intelligentiam: quam mediantibus rerum physicarum formis intus per sensus exteriores ingestis.” *De imaginum compositione*, 101: “Ita animus sensusque noster species atque favores quosdam immediate a supremo mundo sibi procurat, comparat et recipit, quosdam vero per medium rerum naturalium atque sensibilibus.” For the mind’s illumination by superior intellects in Bruno, see *De gli eroici*, 1137;

ordered<sup>239</sup>, and therefore they lend themselves to progressive contemplation by the mind, that is, the mind may gradually ascent up to the level of the twofold transformation, familiar from *De umbris*: the “transformatio rei in seipsum” and the “transformatio sui in rem”. In *De gli eroici furori*, the intellect’s transformation was explored in terms of an allegorical reading of the myth of Acteon<sup>240</sup>.

As was pointed out above, Bruno’s mnemotecnical and magical works contain elements drawn from the doctrine of species multiplication<sup>241</sup>. For example, the images and species that are present in the soul are seen as effects of emanations from the surface of sensible objects<sup>242</sup>. In the case of visible species, these are transported by the light<sup>243</sup>. At first glance, the acceptance of species

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*Spaccio de la bestia trionfante*, in *Dialoghi*, 552, 641, and 782; *Cabala del cavallo pegaseo*, in *Dialoghi*, 874.

<sup>239</sup> See *De umbris*, 25, *De la causa*, 154; and *De gli eroici*, 1060. From the publication of the Italian dialogues onwards, Bruno’s hierarchical concept of reality was mitigated by his view of the infinite, physically homogeneous universe. However, also in this context, Bruno did not eliminate the existence of various levels in natural reality, with regard to knowledge as well as to its means.

<sup>240</sup> See *De umbris*, 49; *De gli eroici*, 1005f. For discussion, see my *Il problema della conoscenza in Giordano Bruno*, cap. IV.

<sup>241</sup> The species doctrine also figured in contemporary studies on magic. Claudius Caelestinus, for example, referred to it in his analysis of extraordinary psychological phenomena. See Claudius Caelestinus, *De his quae mundo mirabiliter eveniunt: ubi de sensuum erroribus, & potentiis animae ac de influentiis caelorum*, Parisiis 1542, 19r-v: “ita persuaderi potest quòd aliqua species in anima Sortis fortiter impressa, & eo vehementer cogitante, volente, vel desiderante, quòd illud scirem vel inde movetur, possibile esse animam meam moveri aliququaliter ab illis speciebus existentibus in Sorte, praecipue quando caetera necessario requisita optimè disposita sunt, (...)”. However, Caelestinus did not deal with problems of cognitive psychology in any systematic way, as Bruno did. For Bruno’s methodological approach, see his view of the conditions of a magical operation in *Theses de magia*, in *Opera latine conscripta*, vol. III, 466: “Propterea omnis anima est in toto horizonte, et a toto horizonte influxum accipit, et in totum inprimit horizontem; unde locus est magicis operationibus, quae nihilominus physicae sunt, quibus subiectum valde distans virtute quadam spirituali in subiectum remotum affectus et passionem quadam potens est inprimere.”

<sup>242</sup> *De imaginum compositione*, in *Opera*, vol. III, 96-97: “Concipit imaginem tanquam rei ipsius effectum a re quodammodo superficie emanantem, et potentiam cognoscitivam informantem primum quidem sensitiva, subinde vero rationali luce”; *Theses de magia*, in *Opera*, vol. III, 472-73: “Apprehensio quoque sensitiva et intellectiva est per similitudines specierum abstractarum ab obiectis cum his quae sunt in eorum superficie.”

<sup>243</sup> *De rerum principiis, elementis et causis*, in *Opera*, vol. III, 512-13: “Lux est (1) substantia spiritualis (...) (7), vehiculum specierum seu imaginum.” According to Roger Bacon, the most evident example of a visible species is a lightbeam; see

multiplication would seem to be contradictory for an author of established Platonic repute<sup>244</sup>. Yet, the fact that Bruno endorsed this doctrine in this specific context should not surprise us too much. The multiplication theory emphasized the physiological and mechanical aspects of the transmission of sensory information through the medium and the senses<sup>245</sup>. Species multiplication was tacitly presumed to apply to intellectual knowledge, too, by numerous masters of arts at the end of the thirteenth century<sup>246</sup>. Moreover, it played a role in the psychology of Cusanus, Fracastoro, and Bacilieri<sup>247</sup>. Now, it is well-known that many of Bruno's writings looked at the senses as a possible cause of the fallibility of our conceptions<sup>248</sup>. In his magical works, however, Bruno did not question the sensible origin of human knowledge<sup>249</sup>. On the contrary, the operational works depend crucially on the connection between sensible reality, imagination and intellectual activity for the adequate organization of our knowledge and for the possibility of extraordinary operations. In this context, the inner senses are taken to perform a necessary mediating function between sensible reality and the intellect, as their contents derive directly from sensible forms<sup>250</sup>.

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*De multiplicatione specierum*, in D.C. Lindberg, *Rogers Bacon's Philosophy of Nature*, Oxford 1983, p. 2.

<sup>244</sup> The active nature of sense perception is a widely shared tenet among Neoplatonic authors; cf. Plotinus, *Enneades* VI.7.7. The active character of sensation, however, is already emphasized by Alexander; see *De anima*, 60, ll. 6-8; *Quaestiones Naturales*, 98. Cf. also P. Henry, "Une comparaison chez Aristote, Alexandre, et Plotin", in *Les sources de Plotin*, Genève 1960, 427-449, on p. 437 and 444. It is well-known that Augustine was deeply influenced by this Neoplatonic view; cf. ch. III, § 1.

<sup>245</sup> See ch. II, § 2.3, for Roger Bacon's determination of this doctrine.

<sup>246</sup> See ch. III, § 2.1-2.

<sup>247</sup> See ch. VI, § 1-2.

<sup>248</sup> *Sigillus sigillorum*, in *Opera*, vol. II.ii, 170-72; *De minimo*, in *Opera*, I.iii, 191-95; *Cena de le ceneri*, 205; *De l'infinito, universo e mondi*, in *Dialoghi italiani*, 369-70.

<sup>249</sup> See, for example, *Theses de magia*, in *Opera*, vol. III, 481, for a substantive revaluation of sense perception.

<sup>250</sup> See, for example: *Cantus circaeus*, in *Opera*, vol. II.i, 236: "Formae verò aliae quae sunt intrinsecae, extrinsecarum rivuli atque filiae, quae per vehicula & canales sensuum externorum, sese in phantasticam facultatem ingesserunt, sunt praesentis intentionis"; *Lampas triginta statuarum*, in *Opera*, vol. III, 141: "Est phantasia, quae est sensus internus, veluti receptaculum et horreum specierum extrinsecus sensibilibium"; *idem*, 146: "Est habitus seu collectio specierum sensibilibium, quae a sensibus externis ingestae sunt in horreum sensus interioris; unde ab-

Bruno acknowledged the mediated character of all human cognition, and he did not countenance any fundamental rupture between mind and the sensible world. As we have seen, his mnemotechnic and magical works reconsidered the contribution of the senses in knowledge acquisition; there he proposed a number of genuinely Aristotelian views on the sensible origin of intellectual knowledge. In other works, when he was more specifically concerned with theoretical problems, Bruno usually assumed an intra-mental basis of human cognition. Still, also in *De umbris idearum*, *Sigillus sigillorum*, and *De gli eroici furori*, the circular structure of reality entailed that cognitive processes are initially sense-dependent. Accordingly, the intelligible species or ideal shadows, representing the formal structure of natural reality, were seen as indispensable instruments in the ascent of the soul.

Bruno's thought on the intelligible species also contained strongly Neoplatonicizing tendencies, however. In *Sigillus sigillorum*, for example, the notion of a "contemplatio specierum"<sup>251</sup> entails a blurring of the distinction between "quo" and "quod intelligitur"; thus, intelligible species and pure intelligibles or ideas are assimilated<sup>252</sup>. This Platonicizing tendency is confirmed by Bruno's interpretation of intellectual abstraction and the role of mathematics in it<sup>253</sup>.

Bruno's psychology of cognition was made up of apparently conflicting views. Thus, he believed that there are two modes of knowledge acquisition, namely, by virtue of illumination and on the basis of sense perception<sup>254</sup>. Furthermore, he rejected the

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sentium sensibilibus praesentes habemus species et simulacra." See also *Sigillus sigillorum*, 172.

<sup>251</sup> *Sigillus*, 197: "Mathesis docens abstrahere a materia, a motu et tempore, reddit nos intellectivos et specierum intelligibilium contemplativos."

<sup>252</sup> See also *Theses de magia*, 462-63.

<sup>253</sup> *Sigillus*, 197: "Nobis sane a corporum imaginibus et umbris, quae sunt obscura sensibilia, per mathemata, quae Platoni sunt obscura intelligibilia, ad ideas, quae eidem sunt clara intelligibilia, datur accessus, sicut et illarum claritas nostrae rationi per media mathemata sese intrudit."

<sup>254</sup> Notice that many medieval Peripatetics, in particular followers of Albert the Great, hypothesized the possibility of a sense-independent knowledge of separate substances, and of the mind's illumination by the latter.



Platonic innatism of contents<sup>255</sup> as well as the Peripatetic doctrine of sensible forms as potential intelligibles<sup>256</sup>. His alternative view of mental representation hinged on the intrinsic intelligibility of the species or shadows<sup>257</sup>. Independently of their origin, the species ground the relation between mind and its cognitive objects. Ideal shadows and intelligible species are abstract with regard to matter and sensible conditions, and therefore they pertain to a higher level on the “schala naturae”<sup>258</sup>. By virtue of their ontological position, shadows and species were frequently described by Bruno as the contents of mental acts. Seen from this angle, the equation of species and “clara intelligibilia” becomes inevitable<sup>259</sup>. But although Bruno assimilated the intelligible species to the ideas, he generally did not argue for their innateness. For this reason, his position was essentially different from that of the Latin Neoplatonics and that of Ficino<sup>260</sup>.

Species have an ontological mark: as shadows they reflect the formal structure of reality. As “notio” they have a psychological function: it is by virtue of them that the mind has access to the extramental world. The species and shadows represent by means of substitution, that is, they stand for features of reality, in the sense that they *are* these features at a mental level. All in all, these facts indicate that Bruno’s thought did not allow of any clear distinction between mental representation and cognitive content. A similarly

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<sup>255</sup> With his reference to innate species in *Summa terminorum metaphysicorum*, in *Opera*, vol. I.iv, 116, and 120-21, Bruno described the opinion of others rather than his own.

<sup>256</sup> For Bruno, the sensible representations and forms are not potential intelligibles, but only inadequate representations of the ideas.

<sup>257</sup> As regards this intrinsic intelligibility, see already Pomponazzi’s reflections on the status of the intelligible species as “actu intellecta”, discussed in ch. VII, § 1.1.

<sup>258</sup> For this concept in Bruno, see *De umbris*, 23-26; *De la causa*, 151. From *De la causa* onwards, Bruno rejected a formal hierarchy between natural and intelligible reality, but he did not give up the view that there are various levels in the infinite, physically homogeneous, universe, which as a whole is seen as the intelligible world.

<sup>259</sup> For the assimilation of the species to the object, see *Sigillus*, 197; *De gli eroici*, 1019 and 1119; *Lampas triginta statuarum*, 161.

<sup>260</sup> See ch. I, § 4, and ch. VI, § 1.3.

intimate connection between representation, act, and content will also be found in various seventeenth-century theories of ideas<sup>261</sup>.

### 3.4. *Scipio Agnello*

In *Disceptationes de ideis*, Scipio Agnello<sup>262</sup> submitted a view of the intelligible species that may be seen as a logical synthesis of Bruno's work on the formal principles of intellectual knowledge<sup>263</sup>, although there are no indications that Bruno actually influenced Agnello. They certainly breathed the same philosophical atmosphere, however. Indeed, also Agnello developed a syncretistic psychology of cognition.

Like Bruno, Agnello postulated two distinct modes of knowledge acquisition, one based on the ideas themselves, the other on their images or shadows:

Rem utique in Idearum lumine cognosci, duobus modis intelligi potest: vel ut nos in hac vitâ, non per veras Ideas, sed per Idearum umbras, & imagines res dignoscamus, vel ut res dignoscamus per divina ipsa Ideas.<sup>264</sup>

Agnello endorsed the doctrine of the participation of ideas for all levels of reality. The human intellect is a participation of the divine intellect, and its contents are a participation or similitude of the supreme intelligibles. In accordance with this outlook, mental contents were characterized by Agnello as participated ideas or as intelligible species, because they only represent the proper cognitive objects<sup>265</sup>.

Referring explicitly to the medieval and Renaissance tradition, Agnello stated that he did not want to discuss whether the intelligible species arise from the sensible world or whether they are innate. In this context he also observed, rather surprisingly, that Henry of Ghent's insistence on the divine origin of the species

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<sup>261</sup> See, in particular, Descartes and Arnauld, examined in ch. XI, § 1 and ch. XIII, § 1.2, respectively.

<sup>262</sup> Scipione Agnelli Maffei, † 1653; bishop of Casale and author of historical works on Mantua.

<sup>263</sup> *Disceptationes* was published in Venice, 1615.

<sup>264</sup> *Disceptationes*, 108.

<sup>265</sup> *Disceptationes*, 108: "(...) quod species intelligibiles sunt participationes, ex similitudine divinarum Idearum."

needs no further comment. Agnello was obviously not interested in the precise explanation of the origin of species. Indeed, as he saw it, whether the species are abstracted from sensible things, innate, or introduced by God, the fact that they are participated similitudes entails that they represent the supreme ideas<sup>266</sup>. Since both the intelligible species and the sensible species are participated ideas, it is certain that we know everything in the light of the ideas<sup>267</sup>.

The notion of participation plays a prominent role in Agnello's work. Yet, this did not lead him to a strong version of Platonism, such that the role of sense perception in the generation of intellectual cognition would be only marginal. Irrespective of the question whether they are innate or sense-depended, the intelligible species belong to a divine frame, and this grounds their value as mental representation.

### 3.5. Tommaso Campanella

From the *De libris propriis* it is abundantly clear that Tommaso Campanella<sup>268</sup> was well acquainted with the tradition of the Peripatetic philosophy<sup>269</sup>. He defended the importance of historical research for the reflection on systematical problems<sup>270</sup>, and he recommended first of all the study of Aristotle and his commentators. He also mentioned Telesio and Patrizi<sup>271</sup>. Of these two con-

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<sup>266</sup> *Disceptationes*, 108: "Satis est, species intelligibiles, utcumque accipiantur, sive ut depromptae à rebus, sive ut congenitae, sive ut divinitus illapsae nil aliud esse, quam participatas divinarum Idearum similitudines."

<sup>267</sup> *Disceptationes*, 109.

<sup>268</sup> Tommaso Campanella, 1568 Stilo (Calabria)—1639 Paris; arrested in 1597 by order of the Spanish authorities on charges of heresy and conspiracy; sentenced to perennial imprisonment in 1602; released in 1626, and again arrested and brought to Rome; fled to France in 1634.

<sup>269</sup> See also *Philosophia sensibus demonstrata*, Napoli 1591, "disputatio" I, where he mentions Achillini, Nifo, Porzio, Trombetta, Zabarella, and Marcantonio Zimara. It is probable, however, that he was informed about these authors only on the basis of anthologies, or through a work such as Zimara's *Contradictiones et solutiones in dictis Aristotelis et Averrois*.

<sup>270</sup> *De libris propriis et recta ratione studendi syntagma*, ed. V. Spanpanato, Firenze 1927, 45; this work was written in 1632.

<sup>271</sup> *De libris propriis*, 55: "ex oppositione siquidem veritas melius intelligitur." See also pp. 76-78: Campanella intended to correct Aristotle with Plato. On p. 55, Campanella recommended also the works of Iamblichus, Proclus, the Stoics, the Pythagoreans, Epicurus, and Gassendi. For a general survey of his polemical rela-

temporary philosophers, Telesio was without doubt Campanella's main inspirator<sup>272</sup>.

To a certain extent, Campanella's views with regard to human cognition were just a faithful rendering of Telesio<sup>273</sup>. Campanella duly emphasized the material nature of the human soul insofar as it could be identified with the spirit, arguing that an incorporeal sensitive soul cannot be the subject of bodily sensations. The spirit, a subtle, ethereal, bright and warm substance, dwells in the head as in a fortress, and roams the nervous system like a pilot in a ship<sup>274</sup>. Campanella's thought was related to Telesio's on other points as well, for example with regard to the relation between the spirit and the divine, created soul<sup>275</sup>, and the relation between sense perception and intellective cognition<sup>276</sup>. With his master he also shared the polemical attitude toward the noetics<sup>277</sup>, the cognitive psychology<sup>278</sup>, and the doctrine of distinct cognitive faculties of the Peripatetics<sup>279</sup>. At certain specific points, however, Campanella's refutation of Peripatetic psychology and epistemology was more detailed than Telesio's. An illustrative example

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tion with Aristotle, see M.-P. Lerner, "Campanella, juge d'Aristote", in *Platon et Aristote à la Renaissance*, Paris 1976, 335-57.

<sup>272</sup> Campanella was also acquainted with the Scholastic tradition (cf. *De libris propriis*, 104), with Scaliger (92) and with some modern French philosophers such as Gassendi and Mersenne (55, 109). In his *Quaestiones celeberrimae in Genesim* (1623), Mersenne condemned Campanella's animistic physics, but appreciated his *Apologia pro Galileo*; see M.-P. Lerner, "Campanella, juge d'Aristote", 350. For discussion of Telesio's influence on Campanella, see L. De Franco, "La *Philosophia sensibus demonstrata* di Tommaso Campanella e la dottrina di Bernardino Telesio", in *Tommaso Campanella (1568-1639). Miscellanea di studi nel 4° centenario della sua nascita*, Napoli 1969, 115-139.

<sup>273</sup> *De libris propriis*, 13, 18, and 78. For a general discussion of his theory of knowledge, see B.M. Bonansea, *Tommaso Campanella. Renaissance Pioneer of Modern Thought*, Washington 1969, Part Two.

<sup>274</sup> *Philosophia sensibus demonstrata*, 85; *Prodromus*, Francofurti 1617, 83; *Metaphysica*, Parisiis 1638, repr. Torino 1961, liber I, 37b and 45a; *De sensu rerum et magia*, Francofurti 1620 (reprint in *Opera Latina Francofurti impressa annis 1617-1630*, ed. L. Firpo, 2 vols., Torino 1975), 54. *De sensu rerum natura* was written between 1590-92; the Italian re-elaboration of 1604 was translated in Latin in 1609 and published in 1620; see E. Garin, *Storia della filosofia italiana*, vol. II, 802.

<sup>275</sup> *De sensu*, 117-120. See also Bonansea, *Tommaso Campanella*, 81f, for a discussion of the relation between the divine mind and the material spirit.

<sup>276</sup> *De sensu*, 131-133.

<sup>277</sup> *De sensu*, 134-136.

<sup>278</sup> See *infra*.

<sup>279</sup> *De sensu*, 121-123.

is the doctrine of species. While Telesio did not even mention this notion, Campanella gave a critical analysis of it in *De sensu rerum et magia* as well as in the *Physiologia*.

In *De sensu rerum et magia*, Campanella defended not only the materiality of human cognitive capacities, but also the sensibility of matter itself. If it is true, as suggested by Plato and Aristotle, that matter desires the form, then matter must also 'feel'<sup>280</sup>. In fact, if it is granted that matter is able to undergo something, and that sensation is based on "passio", then it necessarily follows that matter must be able to 'sense'<sup>281</sup>. Like Telesio, Campanella looked upon "tactus" as the primary sense to which all the other senses, including vision, can be reduced<sup>282</sup>. The senses are not the same as the sense organs. Rather, the spirit perceives through the latter and is capable of retaining and comparing what it has grasped<sup>283</sup>. This means that perception aims at the tactile contact between spirit and external object. Thus, sense-perception is a "perceptio passionis"<sup>284</sup>.

According to Campanella, the Aristotelian psychology of perception as based on a "receptio formarum" is incompatible with the view outlined above. He raised various objections against the idea that sense perception consists in the reception of forms or species. In what follows, we shall see that he interpreted Aristotle's theory as saying that the substantial form of the object to be known is first transfused, so to speak, from object to sense, and then from sense to intellect. Let us examine his argumentation more in detail.

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<sup>280</sup> *De sensu*, 49.

<sup>281</sup> *De sensu*, 51.

<sup>282</sup> *De sensu*, 87-94.

<sup>283</sup> *Epilogo magno (Fisiologia italiana)*, ed. C. Ottaviano, Roma 1939, 490. The sense organs are channels through which sensible objects are brought into contact with the spirit; cf. *Metaphysica*, I, 45b.

<sup>284</sup> See *De sensu*, 56; *Epilogo*, 367; *Metaphysica*, I, 35a and 44; II, 59a. For the Telesian background, see *De rerum natura*, V.8-9, and VII.2. This "perceptio passionis" may be interpreted as a primitive anticipation of the distinction between sensation and perception; it is quite improbable, however, that Campanella would have agreed that the passive moment constitute sensation. For the reduction of vision to touch, see *De sensu*, 93. For a similar view, see Nemesius of Emesa, *De natura hominis*, traduction de Burgundio de Pise, eds. G. Verbeke and J.R. Moncho, Leiden 1975, p. 72: "Est autem sensus non alteratio, sed cognitio alterationis; nam alterantur quidem sensus <...>."

If the sense organs were to receive the form of sensible objects, then the latter would necessarily lose their form and thus perish. Moreover, if the sense organ were informed by some species, it would be unable to sense other things. Finally, subsequent incoming forms would necessarily obliterate the power of sense. Indeed, according to the Peripatetics, the sense and the received form are a coherent whole; therefore, the sense cannot survive the loss of a received form<sup>285</sup>. The Peripatetics would have been prone to object here that only the similitudes of objects are transmitted to the sense organs, not their forms as such. However, no coherent picture of this production of similitudes can be given: for who extracts the similitude from the object, and how is it transmitted and connected to the sensory power? In contrast, so Campanella argued, experience shows us that sensation does not occur by means of reception, but by virtue of "immutatio"<sup>286</sup>. Hence, all theories of sense perception based on information by a species must be rejected. Indeed, the production of sensible species is highly problematic: sensible objects or forms cannot produce their own replicas<sup>287</sup>, and the existence of a "sensus agens" cannot be argued

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<sup>285</sup> *De sensu*, 101-102: "Ex quo sequitur, quod obiectum remaneret, absque propria forma; sicut materia nuda: aut corrumperetur penitus. Et quod potentia sentiens, cum primo informatur aliqua specie, non posset aliud quippiam sentire; vel si reciperet aliam formam sensibilem, corrumperetur sentiens vis, quoniam eius forma, qua cum fit unum magis, quam ex materia et forma, Peripateticorum omnium testimonio, corrumpitur accedente nova forma." See also p. 110-111: if one accepts that sense perception is based on information by species or forms, then the simultaneous knowledge of different objects and of contraries becomes *ipso facto* impossible; cf. *Philosophia realis*, pars I: *Physiologia*, in *Opera Latina Francofurti impressa annis 1617-1630*, 144. See also Telesio's similar arguments against the Aristotelian cognitive psychology, in *De rerum natura juxta propria principia*, book VIII.

<sup>286</sup> *De sensu*, 102: "Item declarandum est illis, quis producit similitudines has? quomodo lapis suam similitudinem exuit, & tamen remanet lapis? Et quis eam de lapide extrahit? & quis defert ad sentientem potentiam? & quis copulat? & una suscepta similitudinem quomodo potest aliorum sensibilibus suscipere? Et si est informatio similitudinum, quomodo simul pluribus formis albi & nigri oculus vel potentia oculi indivisibilis informatur? Experientia quoque illis repugnat. Ut enim ignem sentiamus non oportet totam formam ignis suscipere: sed sufficit parum calefieri. Sensus ergo non fit informatione, sed immutatione." The example of the fire producing heat was often used to explain the production of (sensible) species, too; see, for example, Zabarella, *De speciebus intelligibilibus*, in *De rebus naturalibus libri XXX*, Venetiis 1607, 988. Cf. also *De sensu*, p. 106, and *Physiologia*, 176.

<sup>287</sup> *De sensu*, 104: "Quomodo enim lapidis forma stupida passivaque potius quam activa seipsam aut suum simulacrum emittat usque ad oculum, introdu-

for<sup>288</sup>. In his *Metaphysics*, Campanella added a subsidiary argument: species are called intentional either because they are the object of our intention, which is nonsense, or because they are thin and unstable, which makes them very similar to certain types of impression suggested by Campanella himself<sup>289</sup>.

The fact that sense perception involves a real undergoing of external stimuli does not mean that external simulacra enter into the spirit<sup>290</sup>. A "res sentiens" can only receive another form when it simultaneously loses its own form, like wood being burned. In fact, Campanella regarded a "modica immutatio" as a sufficient basis for sensation<sup>291</sup>. In sensation there is always a partial alteration of the spirit through assimilation. According to Campanella, the sensible object exerts a real action upon the soul, not an intentional one: the spirit receives motions, not images or species<sup>292</sup>.

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catque: ubi sane alteratio multiplex & lapidis & aeris & oculi, multa ab activitate requiritur." Cf. also *De sensu*, pp. 102 and 114: "Tandem patet error offerentium simulacra sensui, nil docentium quis ea producit, quomodo veniant & quis inserat potentiae: neque enim lapis nitens se sua forma spoliatur aut imagine, nec superficiali simulacro, ut stulte Lucretius opinatur." For the doctrine of sensation in Epicurus and Lucretius, see ch. I, § 1.4. It was probably for the first time here that these two ancient masters were involved in the species dispute. Cf. *Physiologia*, 146-47.

<sup>288</sup> *De sensu*, 103; cf. *Physiologia*, 147.

<sup>289</sup> *Metaphysica*, I, 35a: "cum species intentionales in sensibus recipi dicunt, se ipsos seducunt. Aut enim sunt intentionales, quia sola intentione nostra considerantur, et hoc stultum est: nam nos et bruta sentimus absque intentione Peripatetica; vel quia sunt reales, sed exiliter, et non constantes, ut color iridis, et hoc nos dicimus: at non semper, nam aliqua objecta fortia imprimunt se ita sensibus ut expelli vix queant."

<sup>290</sup> *De sensu*, 106. There are some passages in which Campanella seemed to admit the species of things; see, for example, *Metaphysica*, I, 40b. These passages are rather isolated, however, and do not prove that Campanella changed his mind with regard to the species doctrine. See Bonansea, *Tommaso Campanella*, 104-105, and notes 57-58, and 103 of his ch. V. I can only partially agree with Bonansea, however, when he claims that (provided that we interpret these texts in context, and do not put undue emphasis on their verbal expression) the sensible species may be taken as that which the spirit perceives first, a kind of representation from which the mind may derive by inference the nature of external objects. In this context, see also *idem*, 112-115, for an analysis of the "esse fluens" which, according to Campanella, the things communicate to the spirit. I do not think that in these passages Campanella meant to say that the spirit receives *representations*.

<sup>291</sup> *De sensu*, 108. On the basis of a partial assimilation, the mind can obtain knowledge of the object through a process of reasoning; see also *Metaphysica*, II, 60b.

<sup>292</sup> *De sensu*, 113: "Nec remanent imagines in spiritu, licet ipse, quia subtilis est, lucidusque, possit eas recipere, sed motus tantum, qui quoniam cum imaginibus subierunt, efficiunt imaginari ac summare. Sed ex calore & frigore, ex sono, &

Perception is concerned with the alterations these motions cause in the spirit; that is why sense cannot be an immaterial power<sup>293</sup>. Like Telesio, Campanella assigned memory, imagination and intellection to the bodily spirit<sup>294</sup>. Intellection for example, he described as a kind of languid sense perception<sup>295</sup>. Actual perception is "passio presentis", intellection is "passio absentis"<sup>296</sup>.

In the *Physiologia*, Campanella resumed his refutation of the intentional species<sup>297</sup>. There he also analyzed the intellectual cognition in more detail, and argued for the redundancy of intelligible species<sup>298</sup>. He endorsed Telesio's view that intellectual knowledge is directed mainly towards universal notions, which Campanella took to be related to a domain of divine ideas, however<sup>299</sup>. In conformity with the spirit doctrine, Campanella described the intellect

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saporibus & odoribus nula profecto imago in sensu recipitur. Imago autem in visu per accidens sentitur, lux vero per se, quae movet ut est affecta." See also p. 123: "Ergo species non servantur sed motiones"; and *Metaphysica*, I, 40b.

<sup>293</sup> *De sensu*, 113-115; *Physiologia*, 144.

<sup>294</sup> *De sensu*, 131. See also Bonansea, *Tommaso Campanella*, 75f.

<sup>295</sup> *De sensu*, 132: "Ergo intellegere est sentire, confuse, & à longe; sentire vero est intelligere prope seu cominus." Also elsewhere, sense and intellect are often identified. However, the difference between the spirit and the divine mind persists; see Campanella's theory of a double intellect, one material and the other immaterial, in *Metaphysica*, I, 39b. See also Bonansea, *Tommaso Campanella*, 83-85.

<sup>296</sup> *De sensu*, 133; *Physiologia*, 189-90.

<sup>297</sup> *Physiologia*, 146, and 178-79.

<sup>298</sup> See the marginal notes in *Physiologia*, 184: "(...) ac esse intellectum activum, qui spoliatur species universales (...) et aptas reddit ut percipiantur ab intellectu passivo, qui factus in actu à specie intelligit, sicut lignum potentia calidum, factum actu calidum ab igne calefacit; hoc fictio est. Nam universale est ipsa particularia similia apprehensa ut unum ob similitudinem, ideoque uno notata nomine. Ergo si sensus sentit particularia, magis sentit universale, quoniam in omnibus particularibus ipsum videt, non autem particularia; et a longe quoque universale agnoscit, & non particularia." It is evident that the doctrinal background of these reflections is Telesio's cognitive psychology, and, in particular, his view of the absolute primacy of sense perception.

<sup>299</sup> *Physiologia*, 184: "Fit intellectio, quando spiritus sentit in se res communes absque ipsarum particularitatibus"; 186-7: "(...) nihilominus correspondet huiusmodi communitas uni Ideae divinae Mentis, unde omnis rerum communitas emanat in gradu propriae participationis"; see also p. 188. This conception must be understood from Campanella's overt anti-Aristotelianism. The Platonic ideas are viewed as the only 'real' universals, while the Aristotelian universal is nothing but a kind of vague, generalized remembrance. Cf. *Metaphysica*, I, 45b, and III, 118b. For discussion, see Bonansea, *Tommaso Campanella*, 88.



as an “ens actu”<sup>300</sup>. This means, among other things, that there is no urgent need for an actualization by means of intelligible species. Moreover, the acquisition of knowledge “per informationem” has undesirable consequences. If the mind were to be actualized by an impressed species, it would be destined to know only the thing represented by this species. A subsequent cognitive act would be possible only after the destruction of the foregoing species. Moreover, on the species theory it is inconceivable that the human soul could ever forget the information it has received, which is contradicted by experience<sup>301</sup>. Like many other medieval and Renaissance opponents of the intelligible species, Campanella presumed the species to be impressed, and he emphasized the intrinsic contradictions in which the view of a physical impression of mental representations entangled itself.

Campanella’s *Metaphysics* sought to explain knowledge by emphasizing the identity between knowing soul and known object. The idea of a cognitive assimilation here developed into a real transformation of soul into object: knowledge entails that the soul knows itself as changed into the object<sup>302</sup>. This view is related to the notion of the soul as containing in a confused way the objects of knowledge<sup>303</sup>. The external objects are the occasion for the soul’s (partial) specification. Knowledge is generated by the soul in virtue of its own structure<sup>304</sup>.

There are some residual problems in Campanella’s account of perception and knowledge, however. Sense perception is seen as perception of a “passio”, brought about by external motions in the spirit. Now, Campanella’s account fails to explain how perception *in se* comes about, and it thereby commits the fallacy of circular reasoning. Again, his view entails a representational theory of sense perception: not the objects themselves are perceived, but

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<sup>300</sup> Cf. the notion of an ‘active’ possible intellect in Thomas Wilton; for discussion, see E. Jung-Palczewska, “Jean de Jandun, a-t-il affirmé la nature active de l’intellect possible?”, in *Mediaevalia Philosophica Polonorum* 27(1986), 15-20.

<sup>301</sup> *Physiologia*, 184-185.

<sup>302</sup> See *Metaphysica*, I, 153b; II, 36b, 59a-62b.

<sup>303</sup> See *Metaphysica*, III, 100a.

<sup>304</sup> For discussion of the relation between self-knowledge and knowledge of the external reality, see Bonansea, *Tommaso Campanella*, 106-115.

only their effects on the spirit. Moreover, Campanella's naturalistic theory of perception seems to be incompatible with his acceptance of innate reasons of knowledge<sup>305</sup>, and his doctrine of divine illumination<sup>306</sup>, which he developed elsewhere. On that view, the soul can acquire knowledge because it shares the eternal reasons by participating in God. In the context of the present study, I think it is not necessary to address these issues in any detail. My purpose here was merely to describe Campanella's place in the historical development of the controversy on intelligible species.

### 3.6. *From Campanella to modern philosophy*

The relation of modern philosophers such as Descartes and Hobbes to philosophers of the Renaissance was, generally speaking, not so much one of specific influences and dependencies, but more one of sharing to a certain extent the same philosophical climate. Keeping this restriction in mind, it is not incorrect to say that Telesio's and Campanella's project of understanding human knowledge acquisition in terms of physiological processes prepared the way for the materialism in cognitive psychology as proposed by Hobbes and Gassendi. Similarly, also Descartes' ideas on the physiology of sensation resemble the views of these Renaissance philosophers. The psychology of Telesio and Campanella was more 'modern', or at least more innovative, than that of Giordano Bruno. Indeed, the latter's eclecticism with regard to the status and function of mental representation concluded an era of philosophical speculation on concept acquisition. Unlike his violent discussions with past masters and schools on issues of cosmology, physics and ethics, Bruno's psychology leant heavily on traditional doctrines. On the other hand, however, it is also true that Bruno's independency and his disregard for tradition paved the way for a fundamentally non-traditionalistic psychology, as in the main systems of seventeenth-century philosophy.

Campanella's refutation of the intentional species on the basis of Telesio's physics and psychology was arguably a legitimate exten-

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<sup>305</sup> See, in particular, the passages from the *Theologia*, quoted by Bonansea, *Tommaso Campanella*, 114-115, notes 113-116.

<sup>306</sup> For discussion, see Bonansea, *Tommaso Campanella*, 115-121.

sion of the latter's thought with regard to human knowledge. Campanella's argument was not to remain unobserved in the seventeenth century<sup>307</sup>. Moreover, his refutation proved to be a remarkable anticipation of later developments in the field of human cognition<sup>308</sup>. The view that motion triggers sense perception was later endorsed by Hobbes and Descartes<sup>309</sup>. Like Campanella, both Hobbes and Descartes denied the need for mediating formal principles in sense perception and intellectual cognition. Yet, there were also important differences. Hobbes, for example, reduced perception to a complex ensemble of causal relations in a mechanical physical system. Thus, perception itself became a kind of movement, or more precisely, a causal reaction to external motion. By this token, Hobbes averted Campanella's problematic view of perception as consisting in a perception of "passiones". Unlike Campanella, Hobbes, and Gassendi, Descartes did not accept the materiality of soul. In some texts, he seemed to endorse a position on which the mind, quite problematically, perceives the motions in the brain. Elsewhere, however, he emphasized the mind's natural capacity to respond to motions and patterns in the brain. According to Descartes, this response is what perception primarily consists in<sup>310</sup>. Endorsing a Cartesian-style dualism of mind and body, many other seventeenth-century philosophers argued for a view of knowledge acquisition as only occasionally dependent on sensory representation or brain traces.

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<sup>307</sup> Cf. Cosmas de Lerma, *Cursus philosophicus*, vol. I, Roma 1665, 489.

<sup>308</sup> When he was still in prison in Naples, Campanella came into contact with Mersenne; although Mersenne did not share his views and attacked them in his commentary on Genesis, he supported the publication of some of his works, among which the *Metaphysica*; cf. *Correspondance du P. Marin Mersenne*, eds. C. de Waard and others, 17 vols., Paris 1932-1988, vol. I, xlvi, 61-64, 70, 122-23, 134, 177-80. Through Mersenne, Campanella came into contact with other contemporary philosophers and scientists, who in turn became acquainted with his works and views; cf. *Correspondance du P. Marin Mersenne*, vol. III, 263, 311-13, 335; vol. IV, 64, 86-87, and 405.

<sup>309</sup> Cf. already Cusanus' view of sense perception, examined in ch. VI, § 1.1.

<sup>310</sup> For a more extensive analysis of the psychology of Descartes, Hobbes, and Gassendi, see ch. XI.

## CHAPTER NINE

### THE LEGACY OF RENAISSANCE ARISTOTELIANISM

The Renaissance dispute on intelligible species among Peripatetic writers started with the objections raised by Vernia, Nifo, and Achillini. About a hundred years later, it was brought to a natural conclusion by the work of Jacopo Zabarella and Francesco Piccolomini. The species issue was not so much removed from the philosophical agenda, but, from then on, the doctrinal context in which it was discussed would be radically different.

After the Council of Trent and, in particular, since the rise of Spanish Scholasticism, Peripatetic philosophy in southern Europe was increasingly dominated by theologians and theological issues. There was also a shift in philosophical genre. Around the turn of the century, the writing of commentaries on individual works of Aristotle was gradually replaced by writing philosophical textbooks or Scholastic manuals. These works were mostly composed for pedagogical purposes, and tended to give highly polished versions of the views of Aristotle and his authoritative commentators<sup>1</sup>. It was by means of these manuals that Peripatetic philosophy was practised and propagated in the seventeenth century. The Scholastic manuals were also avidly studied in the Protestant strongholds in Germany and the Netherlands. They were the works through which Peripatetic philosophy would influence the new philosophy of the seventeenth century.

The Scholastic manuals quoted not only the medieval and Renaissance schoolmen, but also the works of prominent professional Peripatetic philosophers. In expositions on the intelligible species we frequently find the names of Zabarella and Piccolomini. This testifies to the fact that their contributions on this traditional

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<sup>1</sup> In the next chapter, we shall see how these general transformations bear on the species doctrine and on the conceptual frame for its discussion.

issue were particularly appreciated by later schoolmen<sup>2</sup>. I begin this chapter with a discussion of their position on intelligible species (section 1).

The age of the philosophical textbook began with the Reformation, in Protestant as well as in Catholic Europe<sup>3</sup>. The textbook assumed its definite form at the Jesuit theological seminars in Spain and Portugal around the turn of the century. Subsequently, it was to conquer many other institutions of higher learning in the seventeenth century, where it became the main tool for philosophical instruction<sup>4</sup>. The origin of these philosophical textbooks and manuals should be sought in sixteenth-century Aristotelianism, more specifically in the activity of authors such as Lefèvre d'Étaples, Frans Tittelmans, and George Reisch. Some early representatives of this genre, significant for their contribution to cognitive psychology, will be examined in section 2. There I also discuss Scaliger and the early works of Goclenius: these authors were to attract much attention in the seventeenth century. The final part of this chapter (section 3) is devoted to some concluding remarks on the Renaissance debate on intelligible species.

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<sup>2</sup> See, for example, Philippus Fabro, *Philosophia naturalis Jo. Duns Scoti*, Venetiis 1602, 485b, 497b, 500b, and 510a; Raphaelae Aversa, *Philosophia metaphysicam physicamque complectens quaestionibus contexta*, 2 vols., Romae 1625-27, 657b; Bartholomaeus Mastrius & Bonaventura Bellutus, *Disputationes in Aristotelis libros De anima*, Venetiis 1671, 183a, 405a, 444b; Ioannes Lalemandet, *Cursus philosophicus*, Lugduni 1656, 604a, 609a; Claudius Berigardus, *De vetera et peripatetica philosophia. In Aristotelis (...) tres de Anima*, Patavii 1661, 726.

<sup>3</sup> In this period, there was a renewed interest in compendiums and up-to-date surveys of the basic fields of philosophy, in the educational systems on either side of the religious divide; see Ch.B. Schmitt, "The rise of the philosophical textbook", in *Cambridge History of Renaissance Philosophy*, eds. Ch.B. Schmitt and Q. Skinner, Cambridge 1988, 792-804, on p. 801.

<sup>4</sup> In the 1670's, Malebranche would complain that at the universities Aristotle was still regarded as "la règle de la vérité"; cf. *Éclaircissements*, "Préface", *Oeuvres Complètes*, vol. III, Paris 1964, p. 7.

## § 1. LATE REPRESENTATIVES OF THE SCHOOL OF PADUA

1.1. *Jacopo Zabarella*

Already during his lifetime, Jacopo Zabarella<sup>5</sup> was renowned for his erudition and his authority as commentator of Aristotelian philosophy<sup>6</sup>. Moreover, he was known as a famous logician and expert on methodological issues. He was often cited in the psychological work of seventeenth-century Scholastics<sup>7</sup>. Contemporary studies on Aristotle mentioned him as a faithful and reliable interpreter of Peripatetic psychology and epistemology<sup>8</sup>. In spite of the fact that he was a pupil and a nephew of Marcantonio Genua, Zabarella did not share Genua's Averroistic-Simplician reading of Aristotle's *De anima*<sup>9</sup>. Instead, he developed his views on psychology from an Alexandristic perspective.

Like Alexander, Zabarella stressed the fact that intellectual cognition depends on sense perception. In his view of sense perception, he endorsed the doctrine of the multiplication of species<sup>10</sup>,

<sup>5</sup> Jacopo Zabarella, 1533 Padua—1589 Padua; studied humanities, logic, natural philosophy (under Marcantonio Genua), and mathematics at the University of Padua; 1553, doctor artium there; 1564, first chair of logic there; 1568, second extraordinary chair, and in 1577 first extraordinary chair of natural philosophy; 1578-1589, controversies with B. Petrella and with Piccolomini; 1585, second ordinary chair of natural philosophy, in concurrence with Piccolomini. For a biographical sketch, see A. Poppi, *La dottrina della scienza in Giacomo Zabarella*, Padova 1972, 15f. A cursory survey of his psychology is given by Kessler, "The intellectual soul", 530-534.

<sup>6</sup> As regards his acquaintance with ancient and medieval cognitive psychology, cf., for example, *De mente humana*, in *De rebus naturalibus libri XXX*, Venetiis 1607 (first edition 1590, reprint Frankfurt 1966), 921-922 (where he discusses Olympiodorus and Plotinus), 923 (for Simplicius, Galenus, and Andronicus), and p. 966 (for Gregory of Rimini).

<sup>7</sup> See above, note 2.

<sup>8</sup> Cf. R.D. Hicks, *Aristotle De Anima*, with translation, introduction and notes, Amsterdam 1965<sup>2</sup> (first edition: London 1907), Introduction, lxxv, note 4; W.D. Ross, *Aristotle De Anima*, edited, with introduction and commentary, Oxford 1961, 44; J.H. Randall, *Aristotle*, New York-London 1960, pp. 99, 101, and 103; J. Owens, "A note on Aristotle, *De anima* 3.4, 429b9", in *Phoenix* 30 (1976), 107-118, on p. 108; Th. Tracy, "The soul-bootman analogy in Aristotle's *De anima*", in *Classical Philology* 77(1982), 97-112, on p. 98; V. Kal, *On Intuition and Discursive Reasoning in Aristotle*, Leiden 1988, 108.

<sup>9</sup> Moreover, he did not hold that the uniqueness of the intellect is a genuinely Simplician doctrine; cf. Nardi, *Saggi*, 417-420.

<sup>10</sup> *Liber de sensu agente*, in *De rebus naturalibus*, 842. For discussion, see Poppi, *La dottrina della scienza in Giacomo Zabarella*, 69-70. Poppi attributes this

but not without pointing out certain problems connected with it. If sense perception is based on a mechanical multiplication of species, it must also be explained how these material stimuli may cause an effect that transcends them, namely, the sensible act. To solve this problem, Zabarella submitted that the sensitive soul should be seen as both passive (namely, in the reception of species) and active (namely, insofar as it judges these species)<sup>11</sup>. As we shall see, Zabarella developed a similar construction for the intellective act.

Zabarella was the last philosopher of the sixteenth century to take the issue of intelligible species so seriously that he devoted a separate treatise to it<sup>12</sup>. For an adequate understanding of the theses put forward in that work, it will be helpful to take into account some of his other writings as well, in particular *De mente agente*<sup>13</sup>.

From a learned philologist of great repute one would hardly expect the remark that Aristotle speaks frequently of the intelligible species in the third book of *De anima*. Yet, with this remark Zabarella started his exposition in *De speciebus intelligibilibus*<sup>14</sup>. He thus made it clear that he was disinclined to consider any rejection of species on purely philological grounds<sup>15</sup>. Zabarella be-

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doctrine to Albert the Great. As we have seen in ch. II, § 2.3, this doctrine was developed by Roger Bacon, and was subsequently endorsed by many medieval and Renaissance authors.

<sup>11</sup> *De sensu agente*, 851; see Poppi, *La dottrina della scienza in Giacomo Zabarella*, 70-72.

<sup>12</sup> *Liber de speciebus intelligibilibus*, in *De rebus naturalibus libri XXX*; on this treatise, see Poppi, "La discussione sulla «species intelligibilis» nella scuola padovana del Cinquecento", 182-194, reprinted in A. Poppi, *La dottrina della scienza in Giacomo Zabarella*, 97-108.

<sup>13</sup> *Liber de mente agente*, in *De rebus naturalibus*; Zabarella's *De mente humana* and his *De anima* commentary—both published in *De rebus naturalibus libri XXX*—are of minor importance for his views on intelligible species.

<sup>14</sup> *De speciebus intelligibilibus*, 979: "De mente humana agente Aristoteles in 3. de Anima libr. frequenter specierum intelligibilium mentionem fecit; dixit enim ipsam esse locum specierum, ita tamen ut non habeat eas in actu in sua essentia, sed potestatem solum recipiendi, recipit autem ipsas à phantasmatis."

<sup>15</sup> Cf. Agostino Nifo, *In de anima*, 143r-v: Aristotle's *eidos* signifies primarily form; cf. also Girelli, examined in ch. VII, § 4.1. Already William of Ockham emphasized a correct interpretation of Averroes' concept of intention, in *In II Sent.*, 292: "Hoc patet, quia Commentator numquam nominat speciem, sed semper ubi Philosophus dicit 'speciem', ipse nominat 'formam', et accipit formam pro intentione vel habitu." See also p. 308: "Unde ex dictis Commentatoris ibi patet quod

lieved that the notion of intelligible species raises a systematic issue concerning the nature and dynamics of the mental act, which merits a more profound approach. In the controversy on intelligible species, Zabarella attempted to steer a middle course between opponents and defenders of a formal mediation. He believed that intellectual acts concerning external objects would be impossible if the human mind does not receive something. According to him, however, this reception does not entail the existence of any mediating entities prior to the mental act, nor the preservation of known forms in the intellectual soul<sup>16</sup>.

Zabarella started off his analysis of the species issue with a refutation of nativism as endorsed by Simplicians and other Platonics. Then, in chapter II, he gave a cursory survey of the contrasting opinions involved in the species debate. What surprises in this survey is the certainty with which Zabarella observed that all Latins agree on the need for intelligible species in the cognitive act, and that they only quarrel on the nature and function of these principles in the intellection<sup>17</sup>. The first group of authors examined by Zabarella includes Thomas, Duns Scotus, Gregory of Rimini, and Zimara, all of whom were said to have opted for the necessity of "species impressae"<sup>18</sup>. From this classification we may gather that the confusion between the perspectivist and the Thomistic doctrine of species, which developed shortly after Thomas' death, still persisted at this time. It is significant that we find this confusion even in Zabarella, who on the whole had a very keen eye for doctrinal differences between the authors he discussed. Thus, with regard to the nature of the species, he duly noticed a distinction between the position of Duns Scotus and

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non est species in intellectu, quia ibi enumerat intellectum quantum ad omnes dispositiones quas recipit. Unde enumerat intellectum agentem (...) Non autem nominat intellectum qui est species."

<sup>16</sup> See, for example, already his caution in *De mente humana*, 974, concerning the notion of the human soul as "locus specierum", accepted only "per metaphoram".

<sup>17</sup> *De speciebus intelligibilibus*, 980.

<sup>18</sup> *De speciebus intelligibilibus*, 980: "(...) dicunt eas esse quiddam intellectui superadditum, & esse accidentia spiritualia à phantasmatibus in intellectu producta, quae & praecedunt tempore intellectionem, & post eam servantur in intellectu, unde eas impressas appellarunt." Zabarella did not quote Zimara's question on intelligible species, however, but his *Theoremata*; cf. 981.



Gregory on the one hand, and that of Thomas and Zimara on the other hand. Scotus and Gregory were said to take the species as “habere locum obiecti terminantis intellectionem”, whereas Thomas was said to hold that the species presents the form, and that, as “ratio formalis”, it is the basis for the intellect’s first operation<sup>19</sup>. Zabarella remarked that this difference should not be exaggerated, however, as certain “recentiores” did. The disagreement was mainly on the respective roles of phantasm and species in generating the mental act, not on the need for intelligible species as such, understood as preceding this act<sup>20</sup>. Zabarella also mentioned two deviant variations on the view of this faction: Caietanus’ view of the direct ‘absorption’ of the object by the intellect, which is very similar to the theory of expressed species proposed by the opposition, and Jandun’s notion of the intelligible species as “principium receptivum” or “praeparativum”<sup>21</sup>.

As spokesmen of the second faction Zabarella mentioned Henry of Ghent and John Baconthorpe. They rejected the “species impressa”, and regarded the illuminated phantasm as a sufficient condition for triggering the generation of mental acts. More to the point, they believed that the “phantasmatum illustratum”, described

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<sup>19</sup> *De speciebus intelligibilibus*, 981.

<sup>20</sup> *De speciebus intelligibilibus*, 981-82: Scotus thought that the intellect which possesses species does not need the corresponding phantasms anymore for subsequent intellections of the things represented by these species; Thomas, by contrast, regarded a permanent “conversio ad phantasmata” as indispensable. Moreover, according to Thomas, the intellection is produced by the species, while Duns attributed this to species and intellect. For Thomas’ and Duns’ positions, I refer to ch. II, § 3, and ch. IV, § 1.1, respectively.

<sup>21</sup> *De speciebus intelligibilibus*, 982: Caietanus did not accept impressed species, but held that “(...) intellectum fieri res ipsas, & imbibere quodammodo totum obiectum”. Zabarella refers to Caietanus’ commentary on the *Summa theologiae*, I, q. 79, a. 3; see, indeed, *In primam Summae Theologiae partem commentaria*, Parisiis 1514, 358r: “Ex hoc autem quia intellectus non acquirit intelligibile: quemadmodum materia acquirit formam: sed transit in ipsum intelligibile: et ipsum intelligibile imbibit quodammodo in ipso intellectu”. The mind’s act was described in terms of “imbibere” already by Olivi; cf. Petrus Iohannis Olivi, *Quaestiones in secundum librum Sententiarum*, ed. B. Jansen, 3 vols, Quaracchi 1926, vol. III, q. 72, p. 35: “Nam actus et aspectus cognitivus figuratur in obiecto et intentionaliter habet ipsum intra se imbibitur; propter quod actus cognitivus vocatur apprehensio et apprehensiva tentio obiecti.” Cf. *In II Sent.*, q. 58, in vol. II, 415-16.

as a "species expressa", is the causal basis of cognition<sup>22</sup>. In this context, Zabarella also referred (remarkably so) to certain "recentiores" whom he identified as followers of Baconthorpe, but who deviated from the latter's original view that the intellect 'undergoes' only before the intellection, and that it generates the mental act all by itself occasioned by stimuli originating from the senses. The "recentiores", by contrast, held that the intellect's receptivity ("passio") should be understood "formaliter", namely as an "imbibere totum obiectum": the intellect *becomes* the object without any mediating species<sup>23</sup>. Considering the context of this passage and the terminology used by Zabarella, the most probable philosopher to fit this bill would be Caietanus. In fact, shortly before the passage discussed here Zabarella attributed to him almost the same words<sup>24</sup>. From what follows, however, we may gather that Zabarella's direct targets were probably authors such as Girelli and Porzio, whom he reproached for attempting to support their opinions with the aid of Alexander<sup>25</sup>.

Zabarella examined the arguments for intelligible species in chapter III<sup>26</sup>, and those of the opponents in chapter IV<sup>27</sup>. Chapter

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<sup>22</sup> Zabarella identified expressed species and illuminated phantasm; cf. *De speciebus intelligibilibus*, 980 and 983. This identification derived from a misconception of the positions of Thomas and of opponents such as Henry of Ghent. Thomas distinguished between the intelligible species and the "intentio intellecta" or "verbum mentis", that is, the concept formed at the end of the cognitive process; cf. *Summa contra Gentiles*, I, c. 53, 444, and IV, c. 11, 3466. Henry of Ghent developed the notion of an illuminated phantasm as an alternative to the intelligible species. In his works, the expressed species stands for knowledge, more precisely for the Augustinian "notitia"; cf. ch. III, § 3.2. Already Crisostomo Javelli, *Quaestiones naturales super de anima (...) iuxta Thomae dogmata*, 689b, identified the expressed species with the illuminated phantasm. For later discussions on the distinction between impressed and expressed species, see the later schoolmen examined in ch. X, and also Gassendi (ch. XI, § 3).

<sup>23</sup> *De speciebus intelligibilibus*, 982-83.

<sup>24</sup> See, in particular, *De speciebus intelligibilibus*, 982, concerning the "imbibere totum obiectum" attributed to Caietanus. See also Caietanus, *In Primam partem*, 358r (quoted above).

<sup>25</sup> *De speciebus intelligibilibus*, 983: "Ita phantasmata, quando lumine intellectus agentis sunt illustrata, & constituta in esse claro & expresso, apparent intellectui, & nihil in eo imprimunt, sed intellectus fit res illa, quam intelligit, & haec dicitur intellectio: quam sententiam colligunt ex verbis Alexandri, tum in 1. tum in 2. lib. de Anima in cap. de Visu, tum etiam in lib. de Sensu & sensibus."

<sup>26</sup> *De speciebus intelligibilibus*, 983-5: (1) the union of the mind and its object is mediate; (2) impressed species are needed for memory and intellectual habit; (3)

V discusses the errors of the positive and negative theories alike, and argues for the necessity of intelligible species. Zabarella held that the species are impressed upon the intellect by the phantasm, but that they do not precede the mental act, nor remain in the intellect after the intellection. The species is not so much a “ratio operandi”, but rather the cognitive “operatio” itself<sup>28</sup>. The intelligible species is the intellective act itself, namely, with respect to the latter’s dependency on extramental reality.

Zabarella argued that the phantasm alone, that is, without an impressed intelligible species, is not a sufficient condition for the generation of mental acts. In fact, the hypothesis of an “imbibitio obiecti” entails a form of mental receptivity that is similar to that of the species doctrine. Moreover, the idea of an “imbibitio” without the species leads to plain contradictions. The union of the intellect with the intelligible requires that the mind receives something that it did not possess before. To reject this reception while at the same time maintaining that the intellect transforms itself into the known object, involves a contradiction. Moreover, the sort of “imbibere” envisaged here would entail that the intellect as “entitas” is subject to continuous change, hence that it is doomed to perish or to destroy itself<sup>29</sup>. According to Zabarella, who thus continued his polemics with the unnamed “recentiores”, an “imbibitio” of species must be rejected, too. The phantasm is a “forma agens in intellectum” which introduces a form similar to itself, like the flame sets fire to the wood<sup>30</sup>.

In *De speciebus intelligibilibus* Zabarella did not dwell on the position of the agent intellect and its operation. Nonetheless, his refutation of the intellectual “imbibitio”, whether of objects or of species, shows that he gave a special place to the impact of sensory

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the mind’s first act precedes the second act; (4) Aristotle’s and Averroes’ texts support the need for species.

<sup>27</sup> *De speciebus intelligibilibus*, 985-6: (1) the intellect is nothing before knowing; (2) the illuminated phantasm is able to actualize the intellect; (3) there does not exist any intellectual memory; (4) an eternal substance cannot absorb perishable accidents.

<sup>28</sup> Cf. *De speciebus intelligibilibus*, 999, where he rejected both Thomas’ and Jandun’s views on the preparatory role of the intelligible species; see also Poppi, “La discussione sulla «species intelligibilis»”, 191.

<sup>29</sup> *De speciebus intelligibilibus*, 986-87.

<sup>30</sup> *De speciebus intelligibilibus*, 988.

representations in the generation of mental acts. Before continuing our analysis of Zabarella's argument in *De speciebus*, it is useful at this point to take a look at *De mente agente*, where Zabarella discussed the relation between the phantasms and the agent intellect.

The agent intellect does not operate in the sensory images. Rather, it joins the phantasm as its form, and this formal conjunction is what the illumination of the phantasm consists in<sup>31</sup>. Thus enhanced, the phantasm is the object that moves the possible intellect:

(...) iungitur enim phantasmatibus lumen intellectus agentis tanquam forma, qua redduntur actu motiva, & actu intelligibilia (...) ut agere dicatur in intellectum patibilem, non in phantasmata, sed phantasmatibus iungatur ut forma constituens obiectum motivum intellectus patibilis.<sup>32</sup>

The illumination of the phantasms requires that there is a *real* connection between them and the agent intellect, and that they are not just connected "objective" (so Zabarella suggested between the lines) as Caietanus had thought. Nonetheless, Caietanus' formal-objective distinction, as applied to the species and the (illuminated) phantasms, played a role in Zabarella's doctrine of the illumination by the agent intellect. According to Zabarella, the illuminated phantasm is not formally, but objectively intelligible. This means that the phantasm is able to produce a formally intelligible species in the possible intellect:

(...) phantasma enim quantumvis ab intellectu agente illuminatum non est formaliter intelligibile, ideo si fieri posset ut idem formaliter acceptum ad intellectum possibilem transferretur, non intelligeretur ab eo; quia phantasma illuminatum vocatur quidem actu intelligibile, non tamen formaliter, sed objective, nam si ipsummet in intellectu poneretur, non fieret intellectio; sed ideo vocatur intelligibile, quia potest producere in intellectu possibili speciem intelligibilem, quae dicitur intelligibilis formaliter, quia ipsamet recipitur in intellectu.<sup>33</sup>

Surprisingly, we find that Zabarella here endorsed exactly the view of Caietanus with regard to the origin of mental acts, hinging

<sup>31</sup> For a similar definition of the relation between phantasm and agent intellect, see Taddheus of Parma's characterizing their junction as "aggregatum", examined in ch. IV, § 4.4.

<sup>32</sup> *De mente agente*, 1010-11; cf. 1012.

<sup>33</sup> *De mente agente*, 1015.

on a distinction between an objectively intelligible phantasm and a formally intelligible species. Moreover, by this token he also seemed to reintroduce into the cognitive process the same sort of division he had contested elsewhere, namely, in his rejection of a preceding intelligible species<sup>34</sup>. However, the fact that he described the intelligible species as *formally* intelligible can be meaningfully related to his position in *De speciebus intelligibilibus*, where he identified the species and the cognitive act.

By identifying the species and the cognitive act, Zabarella avoided the problematic distinction between the illuminated phantasm and the intelligible species that we have seen in Caietanus. The “phantasmatum illuminatum” is a sufficient condition for the generation of an intelligible species, that is, for the generation of actual knowledge: as objective intelligible, the illuminated phantasm contains the content of the intellect’s act. Insofar as it is illuminated, that is, insofar as it is objectively intelligible, the phantasm occasions the intellect’s grasp of its content. Now, this actual grasp, which is identified with the traditional intelligible species, is an actualization of both the possible mind and the cognitive object, which thus becomes formally intelligible.

In *De speciebus intelligibilibus*, Zabarella took the cognitive act and the impressed species to be two aspects of the same phenomenon, considered in relation to the intellect and to the external object, respectively. If the species had been identified with the mental act sooner, Baconthorpe would have never rejected the intelligible species<sup>35</sup>. Considering Zabarella’s emphasis on the identity of species and act, it is rather surprising that he did not refer to his Renaissance precursors such as Nifo and Achillini, who also accepted the species only on the condition that it was identified with the mental act<sup>36</sup>.

So far, Zabarella’s argumentation in *De speciebus* has been clear and fairly consistent. We now come to a problematic point

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<sup>34</sup> See also the difficulties inherent in the position of Caietanus, analyzed in ch. VII, § 2.1.

<sup>35</sup> *De speciebus intelligibilibus*, 989; cf., indeed, ch. IV, § 2.2.

<sup>36</sup> Cf. ch. VI, § 2.1 and 3.3; cf. also Olivi (ch. III, § 3.4) and Brito (ch. III, § 3.5).

which arises in chapters VI and VII, where Zabarella set out to refute the doctrine of intellectual memory. His arguments against an intellectual memory, which he derived partly from Avicenna and partly based on the principle of parsimony, are consistent with the central tenets of Aristotelian psychology<sup>37</sup>. It seems difficult, however, to bring them into line with his earlier description of the ontological status of the intelligible species, namely, as “ens absolutum & positivum”<sup>38</sup>. Is it plausible to hold that an entity as ‘dense’ as the species exists only in the indivisible moment of the mental act, and vanishes immediately afterwards? Rejecting an intellectual memory, Zabarella was forced to postulate that the intelligible species can be reproduced at any given moment. As long as the species is conceived as an *act*, this instantaneous generation and corruption may be comprehensible, but it is problematic to compass the discontinuous existence of an *entity*.

At this point, however, Zabarella argued that matterless forms or actual intelligibles have no independent existence: they necessarily coincide with the actual intellection and with the actualized intellect. The species that are generated in the intellectual soul are mere effects; they cannot cause or trigger any successive performance of themselves<sup>39</sup>. There is no “intellectio sine phantasmate”; correspondingly, nor is there a “species sine intellectione”, for species are sense-bound products of the illuminated phantasms<sup>40</sup>.

In accordance with this view, Zabarella endorsed in chapter VIII Ockham’s interpretation of the “habitus intellectus” as being just an “aptitudo”. This intellectual habit is a kind of “habilitas ad eandem rem intelligendam”, which arises by training of

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<sup>37</sup> *De speciebus intelligibilibus*, 992-97. The intellect would know continuously. The arguments of Thomas and Duns Scotus regarding the “species impressa” connected to an intellectual memory are rejected. Moreover, a cognitive faculty is either knowing or preservative, as in the case of the senses and the inner senses. Aristotle and Averroes accepted only a sensitive memory, since species depend on phantasms “in esse & conservari”. See also the following pages until 999. For discussion, see Poppi, “La discussione sulla «species intelligibilis»”, 189-91.

<sup>38</sup> Zabarella gave short shrift to a long tradition of silence on the ontological status of the species: to think that everything non-material does not subsist, is to seriously misunderstand Alexander’s thought; cf. *De speciebus intelligibilibus*, 991.

<sup>39</sup> Zabarella refuted Duns Scotus’ distinction between species and intellection as first and second mental act; cf. *De speciebus intelligibilibus*, 997 and 1001.

<sup>40</sup> *De speciebus intelligibilibus*, 993-999.

“phantasmatis inspectio”<sup>41</sup>. Zabarella was not interested in the question of whether some store of intelligible species might still be necessary for the separate soul in an eventual after-life; what happens after death is a matter of theology, not of natural philosophy<sup>42</sup>.

Like so many authors before him, Zabarella sought to reconcile the receptivity of the intellectual soul with the coherence of the mental act. It is for this reason that he regarded the species as the effect of the phantasm, but no longer as the “causa intellectionis”<sup>43</sup>. In my discussion of passages from *De mente agente*, I have argued that Zabarella’s position is consistent if the “phantasma illuminatum” are seen as the necessary and sufficient condition for the generation of intelligible species, namely, as mental acts. Let me now examine the nature of the mental act in some more detail.

Cognitive acts are triggered by phantasms. Surprisingly, Zabarella claimed that the phantasm can move the intellect by itself, too, that is, even before the illumination by the agent intellect. Unilluminated sensory images are received by the possible intellect as “confusae conceptiones” of individual objects<sup>44</sup>. The illuminated phantasms, by contrast, are the basis for a clear knowledge of universals<sup>45</sup>. The agent intellect merely enables the phantasm to convey various types of content to the receptive mind<sup>46</sup>. It does not extract universals from sensory representations. Intellectual abstraction is the discrimination of quidditative essences in the phan-

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<sup>41</sup> *De speciebus intelligibilibus*, 1000; cf. Ockham and Achillini.

<sup>42</sup> *De speciebus intelligibilibus*, 1004.

<sup>43</sup> *De speciebus intelligibilibus*, 1007.

<sup>44</sup> See already Agostino Nifo, *De intellectu*, 16va: without illumination, the mind grasps only singulars.

<sup>45</sup> *De mente agente*, 1013-14. See also *De ordine intelligendi*, in *De rebus naturalibus*, 1045-1054, and 1058-61, where Zabarella argued for direct knowledge of particular beings.

<sup>46</sup> *De mente agente*, 1018: “(...) fit tamen re vera translatio haec ab agente, qui illustrans facit rem è sensili intellectilem, deinde patibilis intellectus eam accipit, & ita abstrahere dicitur”. See also p. 1020, regarding the 6th and the 7th “officia” of the agent intellect: it does not produce the intellection and precedes the abstraction.

tasms by the possible intellect<sup>47</sup>. Indeed, the possible intellect is not just a passive receiver of contents, but is able to isolate them on its own. Thus, intellection is both reception and judgment<sup>48</sup>. In *De speciebus intelligibilibus*, too, the cognitive act is assigned to the possible intellect insofar as it judges the intelligible species<sup>49</sup>.

If the intelligible species, produced by the phantasm, coincides with the intellection, then what further need do we have for a judgment by the possible intellect? Zabarella argued that the phantasms and the receptive mind have a shared causal responsibility vis-à-vis the mental act. Intellection consists in, and is triggered off by the species impressed by the phantasm; it is a sense-dependent representation, and at the same time a mental discrimination of the contents thus communicated by the phantasms. Presumably, Zabarella's position here was motivated by the desire to preserve a proper cognitive function specifically for the *human* intellect. Indeed, Zabarella did not think of the possible intellect as a pure "pati", and he restricted the role of the agent intellect to creating the necessary conditions for universal knowledge<sup>50</sup>. Notice that this construction blurs Aristotle's distinction between primary thought and discursive reasoning.

Summarizing Zabarella's views on species and mental acts, the following points should be mentioned. First, by identifying the intelligible species with the mental act insofar as it is sense-dependent, Zabarella managed to avoid the problems inherent in other

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<sup>47</sup> *De mente agente*, 1016-18. For a similar view, see already Melanchthon (ch. VII, § 3.1.2); most likely, Zabarella influenced Suarez's similar conception of the abstraction, see ch. X, § 1.6.

<sup>48</sup> *De mente agente*, 1019: "(...) nam cognoscere non in sola specierum receptione, quae passio est, consistit, sed etiam in receptarum iudicatione, quae est actio, quare patibilis intellectus speciem quidem recipiendo patitur, sed eam iudicando agit, & ita agendo dicitur abstrahere, quo fit, ut intellectio dicatur actio immanens, quia fit ab ipso patibili intellectu, & ipsomet recipitur." For a similar view, see already Bonaventure (ch. II, § 1.7), Cusanus (ch. VI, § 1.1), and Charles de Bovelles (ch. VI, § 1.4). Notice, moreover, that already the Stoics and Augustine took the mental act to depend on the mind's paying attention to the incoming information.

<sup>49</sup> *De speciebus intelligibilibus*, 999. *De mente humana*, 1011: the possible intellect produces its own act.

<sup>50</sup> *De mente agente*, 1019 and 1020, at point 2 and 4: the agent connects itself with the object in the phantasm and with this latter it forms "unum agens impri-mens in intellectu patibili speciem universalis, & quidditatis". See also Kessler, "The intellectual soul", who, on pp. 531-32, compares Zabarella's position to that of Piccolomini.



Alexandrist positions, such as that of Porzio and Castellani. Unlike Porzio, Zabarella did not beg the question of knowledge acquisition. And, unlike Castellani, he neither endorsed a form of dispositional innatism nor simply identified forms and intelligible species. Secondly, Zabarella removed abstraction from the sphere of competence of the agent intellect, the sole task of which is the illuminating of the phantasms. Subsequently, he characterized intellection in terms of reception as well as judgement. By virtue of its formal union with the agent intellect, the phantasm is able to impress an intelligible species; this in turn triggers the intellectual abstraction, which Zabarella considered to be a discriminative judgment. This construction inevitably entails that the intellectual act must be composite, since the impressed intelligible species cannot coincide with the mind's judgement. Seen from the perspective of the phantasms (that is, from the origin of the mental act), the mental act consists in the impression of species-acts. Seen from the perspective of the intellect itself, the mental act is a conscious isolation of intelligible contents by the (human) possible intellect<sup>51</sup>.

Zabarella's denial of a pure potentiality or receptivity of the human intellect did not lead him to embrace a sort of nativism. Instead, he tried to lay a new foundation for the naturalistic conception of mental acts, which he thought he had found in his twofold determination of the intellectual act. Poppi has pointed out that Zabarella's attention for the subjective moment of knowledge anticipated the general sentiment in modern philosophy on this point<sup>52</sup>. However true this may be, I think it is more important to show in a less generic way how Zabarella may be said to have anticipated later developments on specific points, such as direct cognition of singulars, and abstraction as an operation of the possible intellect<sup>53</sup>.

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<sup>51</sup> The background of this attribution of receptivity and judgment to the same intellect may be the assimilation of species and notion by Nifo and others. Notice that this position has an antecedent in Stoic philosophy; cf. ch. I, § 1.4.2.

<sup>52</sup> Poppi, "La discussione sulla «species intelligibilis»", 194.

<sup>53</sup> Direct intellectual knowledge of particulars would later be accepted by many Jesuit authors of the Second Scholasticism. The distinction between obscure and clear knowledge, in connection with cognition of things that are more or less universal, respectively, would recur in later schoolmen and in Descartes; see ch. X, § 2.1.2-3, and ch. XI, § 1.

### 1.2. *Polo Lauredano and Antonio Scaino*

Zabarella's psychology of cognition was echoed in the commentary on *De anima* by Polo Lauredano. Like Zabarella, he followed the Alexandrist reading of Aristotle's psychology<sup>54</sup>. In his commentary on book III, Lauredano confined himself to a "brevis & resoluta determinatio" of the question of intelligible species, because the issue, as he observed, had been amply discussed by eminent philosophers before<sup>55</sup>.

Lauredano started off his exposition by giving a refutation of Simplicius' "species consubstantiales"<sup>56</sup>. The fact that even as late as the last decenium of the sixteenth century philosophers still thought it necessary to fight Simplician nativism, testifies to the enormous influence and popularity the Simplician interpretation had enjoyed. Like Zabarella, Lauredano sided with the Latin tradition, of which he mentioned Thomas, Gregory of Rimini, and Jandun. The intelligible species, described as "accidentia spirituales", are a necessary condition for full-fledged mental acts. Considering that the intellect is nothing before it knows, however, no species preceding the intellectual act can be accepted<sup>57</sup>. Indeed, species and intellection can be distinguished only "ratione":

(...) nam ut repraesentativa rei ad extra species dicitur, ut intellectus transformatus iudicat, intellectio nominatur.<sup>58</sup>

Lauredano also endorsed Zabarella's claim that the intellect, transformed by the received species, judges the latter. Not unexpectedly, Lauredano refuted the existence of an intellectual memory in almost the same wordings as Zabarella. There is only an intellectual habit, a "habilitas" or "aptitudo". Things that were known before will be grasped more easily on subsequent occasions; simi-

<sup>54</sup> Polus Lauredanus, *In tres libros Aristotelis de anima commentaria*, Venetiis 1594; Lauredano, 1539—1599, a Venetian patrician; for discussion, see Nardi, *Saggi*, 399.

<sup>55</sup> *In de anima*, 253vb: "Brevi, & resoluto modo hanc rem tractare intendo, à multis enim gravissimis philosophis adeo diffuse ipsam discussam invenio, ut qui succincte ipsam tetigerit, maiorem utilitatem, legesti allaturus sit, existimem (...)"

<sup>56</sup> *In de anima*, 253vb-54ra.

<sup>57</sup> *In de anima*, 254rb-255ra.

<sup>58</sup> *In de anima*, 255va.

larly, the guitar-player performs more easily the pieces he knows by heart<sup>59</sup>.

In his paraphrase of *De anima*, Antonio Scaino developed a position that may have been influenced by Zabarella's, but that does not bear the obvious marks of it, unlike Lauredano's position<sup>60</sup>. Scaino accepted the intelligible species on the authority of Thomas<sup>61</sup>. Moreover, on several occasions he observed that the intellect can be described as "species intelligibilis", or also as "species specierum intelligibilium", underscoring the fact that he took the definiens as a genitive<sup>62</sup>. According to Scaino, the cognitive or intelligible object is known only "secundum speciem abstractam a materia"<sup>63</sup>. We may gather from his explanation that Scaino drew no sharp distinction between intelligible form and species. To preserve the coherence of the cognitive act, he preferred to assimilate species and object, in contrast to Zabarella and Lauredano who opted for the identification of species and act. There was no significant affinity between Scaino's position and that of the other two authors, except perhaps for the fact that Scaino, too, presumed the receiving intellect to be active with respect to the accepted species or intelligibles<sup>64</sup>.

### 1.3. Francesco Piccolomini

The reflections of Francesco Piccolomini<sup>65</sup> on mental representation resemble Zabarella's view of species. They both identified the

<sup>59</sup> *In de anima*, 255vb.

<sup>60</sup> *Paraphrasis cum adnotationibus in libros Aristotelis de Anima*, Venetiis 1599. Antonius Scaino, 1524 Salò—1612 Salò; studied philosophy at the University of Ferrara; doctor theologiae.

<sup>61</sup> *Paraphrasis*, 15.

<sup>62</sup> *Paraphrasis*, 135a-137a. Cf. the views of Albert, examined in ch. II, § 2.1.

<sup>63</sup> *Paraphrasis*, 136a.

<sup>64</sup> *Paraphrasis*, 136a: "(...) ita quoque anima intellectiva est species intelligibilium, quae suscipit, & circa illa operatur intelligendo." See also pp. 135b and 136b: the intellect considers ("speculatur") the species. Another, more general point of agreement is the belief that the intelligibles that we know, exist in the phantasms; see p. 135b.

<sup>65</sup> Francesco Piccolomini 1523 Siena—1607 Siena; studied at the University of Siena; 1546, doctor in artibus et medicina there; 1546-49, teaches logic and philosophy there; professor of philosophy in Macerata (1549-50), and in Perugia (1550-1560); 1560-1598, teaches philosophy at the University of Padua; 1578-

species with the intellectual act, and assimilated the simple apprehension to judgment. It is not easy to decide whether there has been any direct influence between Piccolomini and Zabarella, since the solution of identifying species and act had been known long before their time. There is really only one point on which a possible influence between them may be based, namely, the idea that the possible intellect judges the species in the first act of knowledge (simple apprehension).

Zabarella's and Piccolomini's careers at the University of Padua partly overlapped. It is well known that they disagreed on many questions of methodology and psychology<sup>66</sup>. Yet, they were united in their opposition against the Neoplatonic interpretation of Aristotle's writings<sup>67</sup>. As we have seen, Zabarella set out to develop a form of Aristotelianism that is completely untinged by Platonism. Piccolomini, by contrast, was reluctant to commit himself as straightforwardly in behalf of either one of the schools.

With regard to the analysis of natural reality, Piccolomini accepted without any reservation the authority of Aristotle's philosophy; at the same time, however, he expressly restricted this authority to the domain of natural philosophy. He believed that the immortality of the intellectual soul is a matter that falls beyond this scope<sup>68</sup>. This peculiar position<sup>69</sup> has given rise to all sorts of misunderstanding in the critical literature on Piccolomini, where he is sometimes regarded as an Averroist<sup>70</sup>, but sometimes also as a Platonist<sup>71</sup>. Piccolomini was a versatile commentator of Aristotle's work and a talented philologist<sup>72</sup>; for many years he

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1594, controversy with Zabarella; 1598, retired to his villa near Sienna. For a biographical sketch, see A.E. Baldini, "Per la biografia di Francesco Piccolomini", in *Rinascimento* 20(1980), 389-420.

<sup>66</sup> Kessler, "The intellective soul", 527, note.

<sup>67</sup> Kessler, "The intellective soul", 527; Nardi, *Saggi*, 427.

<sup>68</sup> Garin, *Storia della filosofia italiana*, 658; and Kessler, "The intellective soul", 527-28.

<sup>69</sup> Among others, already Grosseteste endorsed a similar view of Aristotelian philosophy; cf. ch. II, § 1.4. See also the opening words of Ficino's *Theologia Platonica*.

<sup>70</sup> Nardi, *Saggi*, 424.

<sup>71</sup> Garin, *Storia*, 657-8.

<sup>72</sup> He was one of the first to doubt the authenticity of Simplicius' *De anima* commentary; cf. Nardi, *Saggi*, 424, and 431-35; and F. Bossier and C. Steel,

considered the Averroist interpretation of the immortality of the intellectual soul as genuinely Aristotelian. He later came to endorse the psychology of Plotinus, however, pivoting on the notion of an intellect that endows man with a superior grade of perfection<sup>73</sup>. He denounced Simplicius and Genua for their introduction of innate ideas in Aristotelian philosophy<sup>74</sup>; according to Piccolomini, Aristotle held that the mind only has the capacity to form notions and to develop discursive reasoning<sup>75</sup>.

In *Peripateticae de anima disputationes*, published under the name of Pietro Duodo, Piccolomini gave a first and cursory overview of his interpretation of the species doctrine<sup>76</sup>. The soul may be described as a “locus specierum”, provided that these species are seen as “forma”, “natura”, “essentia”, or “ipsum universale”<sup>77</sup>. Piccolomini obviously saw no point in any precise terminological distinction between these terms. In *De humana mente* he described the mind as “species specierum”, and determined that the intelligible species is equivalent to the intelligible object<sup>78</sup>. Piccolomini here considered the possible intellect to be endowed with “notiones intelligibiles” by the agent mind<sup>79</sup>. And, although he attributed the generation of the cognitive act to the

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“Priscianus Lydus en de *In de anima* van Pseudo(?)-Simplicius”, in *Tijdschrift voor Filosofie* 34(1972), 761-821, on p. 762.

<sup>73</sup> Nardi, *Saggi*, 429-43; Kessler, “The intellectual soul”, 527-528.

<sup>74</sup> *De humana mente*, in Franciscus Carolus Piccolomineus, *Librorum ad Scientiam de Natura attinentium Partes Quinque*, Francofurti 1597, 1216-1327, pp. 1310-13.

<sup>75</sup> *De mente*, 1312: “Pro resolutione itaque difficultatis, menti humanae rationes competere, dupliciter intelligi posse, vel pro facultate & virtute formandi notiones & ratiocinandi, vel pro formis in ea insitis respondentibus ideis, in prima significatione concedi debent, reiji autem in secunda.”

<sup>76</sup> Published in Venice (1585). For the background of this work, written by Piccolomini under the name of one of his pupils, see Garin, *Storia*, 659; Baldini, “Per la biografia di Francesco Piccolomini”, 399.

<sup>77</sup> *Peripateticae de anima disputationes*, 186; see also *In tres libros Aristotelis De Anima, lucidissima expositio*, in *Disputationum et commentariorum in Aristotelis libros, De ortu et interitu; et De anima: Libri duo*, Francofurti 1619, 381-1000, on p. 923: “Considero Tertio, quod Aristoteles de Mente ait, quod intelligit species, sive formas in Phantasmatibus: nam Obiectum proprium Mentis, non est Phantasma, id enim singulare est, sed Species, Forma, & Essentia, quae per Phantasma offertur, & est Universale, ideo dicitur eam speciem in Phantasmatis intelligere (...)”.

<sup>78</sup> *De humana mente*, 1219. Cf. the terminology used by Albert the Great.

<sup>79</sup> *De humana mente*, 1226.

agent mind, Piccolomini held that the possible and the agent intellect or mind are essentially one<sup>80</sup>. As we shall see, Piccolomini believed that it is the same intellect that is touched by the phantasms and that actually judges its affections<sup>81</sup>.

One chapter in book III of *De humana mente* is devoted to the question "An detur species intelligibilis distincta ab actu intelligendi"<sup>82</sup>. At the outset of this chapter, Piccolomini established that those who defend a real distinction between species and act, regard the species as "qualitas spiritualis"<sup>83</sup>. He then proceeded to discuss four opinions on this issue. The first opinion he attributed to Theophrastus, Plutarchus Lydus, Priscianus Lydus, and Simplicius: that there exist "rationes in essentia animae insertas" as well as species originating from external objects<sup>84</sup>. The second opinion he attributed to Thomas, Duns Scotus, Jandun, and Zimara, who were said to distinguish between species expressed and impressed. The expressed species should be seen as "phantasma illustratum"<sup>85</sup>, the impressed species as "in subiecto recepta"<sup>86</sup>. The third opinion, according to Piccolomini, is that of Buccaferrea<sup>87</sup> and other authors who reject the species, while the fourth opinion accepts the species in sense perception but not in intellectual knowledge<sup>88</sup>. Still other authors (such as Achillini), so Piccolomini observed, are in partial

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<sup>80</sup> *De humana mente*, 1235: they are one in essence. Also other medieval and Renaissance authors challenged the distinction between possible and agent intellect; see William of Auvergne (ch. II, § 1.4), Peter Olivi (ch. III, § 3.4), James of Viterbo (ch. III, § 3.5), Durandus (ch. IV, § 2.2), and Mocenigo (ch. VIII, § 1.3).

<sup>81</sup> Cf. *De humana mente*, 1309 (quoted below). See already Bonaventure (ch. II, § 1.7), Cusanus (ch. VI, § 1.1) and Zabarella (*supra*). See also Kessler, "The intellectual soul", 529; Garin, *Storia*, 659; Nardi, *Saggi*, 428.

<sup>82</sup> *De humana mente*, 1303f.

<sup>83</sup> Cf. the 14th-century Averroists (ch. IV, § 4), and Porzio (ch. VII, § 4.2).

<sup>84</sup> *De humana mente*, 1304. He refers to Simplicius' commentary on *De anima*, III, te. 39.

<sup>85</sup> The identification of expressed species and illuminated phantasm derived from a misunderstanding of Thomas and of his opponents such as Henry of Ghent. Already Crisostomo Javelli, *Quaestiones naturales super de anima (...)* iuxta Thomae dogmata, 689b, identified the expressed species with the illuminated phantasm. Also Zabarella conflated expressed species and illuminated phantasm; see *De speciebus intelligibilibus*, 980 and 983. For discussion, see § 1.1. For later discussions on the distinction between impressed and expressed species, see the later schoolmen, examined in ch. X, and also Gassendi (ch. XI, § 3).

<sup>86</sup> *De humana mente*, 1304.

<sup>87</sup> See ch. VII, § 3.2.1.

<sup>88</sup> This was held by Henry of Ghent; cf. ch. III, § 3.2.

agreement with Simplicius, accepting the species as “cognitum in cognito”<sup>89</sup> rather than as accident. It is remarkable to find Achillini in the company of Simplicius here, with whose commentary on *De anima* he was not acquainted. Moreover, it is somewhat bewildering to find him classified as a partisan of the species doctrine, though not unconditionally so.

Piccolomini first examined the arguments in favour of species, basing himself on passages from Aristotle, Averroes, Themistius and Alexander, which emphasize the receptivity of the mind<sup>90</sup>. He then set out to demonstrate that, on Aristotelian principles, the species cannot be distinguished from the cognitive act. It may be true that there is no lack of rational arguments in behalf of the species doctrine, and that many theologians have argued that species are needed. Yet, the notion as such is not genuinely Aristotelian<sup>91</sup>.

Piccolomini's first three arguments against a real distinction between species and act are all based on a strictly hierarchical conception of the intellectual soul. Thus, (1) superior entities cannot be perfected by inferior ones; (2) no form that is independent from matter can accept forms as a subject; and (3) the invariable cannot receive the variable<sup>92</sup>. Moreover, (4) Aristotle does not speak of an intellectual memory. Also, (5) if species would exist, then phantasms would inevitably become superfluous. Alternatively, (6) a “phantasmatum illustratum” is sufficient to trigger the mental act<sup>93</sup>. This conclusion reverberates the position of Castellani as well as that of Henry of Ghent. (7) Aristotle nowhere speaks of species as something additional to the mind and its act. Indeed, (8) any kind of medium would impair the intimate bond between intellect and intelligible<sup>94</sup>. Finally, (9) the human mind is nothing before it knows, and (10) it is impossible that it

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<sup>89</sup> See already the position of Albert the Great, discussed in ch. II, § 2.1; cf. also ch. IV, § 1.5.

<sup>90</sup> *De humana mente*, 1304-1305.

<sup>91</sup> *De humana mente*, 1306.

<sup>92</sup> *De humana mente*, 1306.

<sup>93</sup> *De humana mente*, 1306. This was the position of Henry of Ghent; cf. ch. III, § 3.2.

<sup>94</sup> This was also emphasized by Nifo in his arguments against intelligible species; see ch. VI, § 3.

should receive anything, as is attested by *Physics*, VII.20<sup>95</sup>. Piccolomini's purpose in quoting this crucial and much discussed passage was not the same as that of authors of the late Middle Ages and early sixteenth century. The latter had quarreled about its place in the system of Aristotle's thought, and about the validity of the interpretation proposed by Averroes<sup>96</sup>. By contrast, Piccolomini did not read this text as confirming the view of a perfect and unchanging intellect, nor did he discuss in any detail whether Aristotle was presenting Plato's opinion or expressing a view of his own. He merely used it to emphasize that the cognitive act does not entail any intellectual receptivity. It is precisely on this point that he distinguished himself from Zabarella, who attempted to reconcile receptivity and judgement in his conception of the mental act.

Piccolomini observed that any alleged species could only be a mental act or a notion, thus implicitly showing his dependence on the tradition originating from Nifo:

Colligamus itaque, non esse concedendam speciem intelligibilem distinctam ab actu intelligendi, & hae voces, species intelligibilis, intelligibile actu, notio, actus intelligendi, re idem denotant, (...).<sup>97</sup>

The primary cognitive act is "iudicium". This judgement does not require that something is impressed on the mind, as Zabarella claims<sup>98</sup>. In this judgement, the human soul knows the intelligible object, elsewhere also called an "essentia materiata" by Piccolomini<sup>99</sup>.

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<sup>95</sup> *De humana mente*, 1307.

<sup>96</sup> This argument from Aristotle's *Physics* played a crucial role in the considerations of Burley, Vernia, Achillini, Pomponazzi, and Zimara, regarding the species doctrine.

<sup>97</sup> *De humana mente*, 1307.

<sup>98</sup> *In de anima*, 841.

<sup>99</sup> *In de anima*, 869: "Respondeo, dum sermo est de Obiecto alicuius facultatis, intelligi debet Obiectum secundum se & primum, quod eam est aptum movere, huiusmodi autem est Essentia materiata, quae per proprium Phantasma est apta movere Mentem, quae se habet ad Mentem ut Sensibile ad Sensum, (...)". The "essentia materiata" is a shadow of the divine idea; see *De rerum definitionibus*, Venetiis 1600, 19r: "(...) pro originali rerum forma, Divina Menti insita, & pro absoluto ab ea non distincta, cum illae, quae in materia apparent, sunt umbrae, imitationes, & participationes." For the expression "idea materiata", see Liebler (ch. VII, 3.1.4).



The mind's object, conceived as what the mind effectively grasps, can also be described as "notio"<sup>100</sup>. Platonic writers also used the term "idea", but "notion" is more appropriate here<sup>101</sup>. Piccolomini's preoccupation with the coherence of the mental act thus led him to blur the distinction between act and content.

The mind does not depend on species produced by the sensory images; it simply reacts to the latter:

Respondeo, phantasma non producere speciem, sed esse speciem, quae oblata mente iudicatur, ea autem in phantasia est species sensibilis, & per mentem fit species intelligibilis, quae est ipsemet actus intelligendi.<sup>102</sup>

In this passage, Piccolomini identified sensible species with phantasms. The presence of the latter triggers the mind's judgment of their (intelligible) content. In other words, the mind's processing of sensory images results in an intelligible species, which is the mental act itself.

Piccolomini emphasized the coherence between representation, act and content at the mental level. His assimilation of species, intellection and notion was an attempt to detach cognitive psychology from the conceptual and terminological framework of Aristotelian physics. Although the sound of the past remained distinctly audible, Piccolomini's conception of the mental act had original aspects as well<sup>103</sup>.

Piccolomini's emphasis on the identity of mental representation and act was a reverberation of some medieval alternatives to the species doctrine, namely, those of Godfrey of Fontaines, Peter Olivi, Radulphus Brito, and John Baconthorpe<sup>104</sup>. His view of the

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<sup>100</sup> Cf. *De rerum definitionibus*, 17r: "Quarto dividi potest intelligibile quia usurpatur, vel pro re quae est obiectum Mentis, vel pro notione Mente comprehensa repraesentante rem: Primum est verè intelligibile: Alterum est id, quod Mens illud intelligit. Elicitur distinctio ex Aver. primo Metaphysicae 45. & ob id Aristotile, in tertio de anima dixit, Mentem non fieri lapidem, sed notionem eius, repraesentantem lapidem: Haec ex opinione Aristotelis."

<sup>101</sup> *De rerum definitionibus*, 19v: "Idae demum rerum, quae noscuntur, quarum imagines mente conciperentur, & sunt notiones eius, hac profecto minus proprie dici possunt Idae."

<sup>102</sup> *De humana mente*, 1309.

<sup>103</sup> It is rather stretched to regard his psychology of cognition as an anticipation of Kant's transcendental idealism; cf. Kessler, "The intellective soul", 530.

<sup>104</sup> See ch. III, § 3.3-5, and ch. IV, § 2.2.

coherence between act, representation, and content resembled the position of Lefèvre d'Étaples, of Nifo, and that of Nifo's followers<sup>105</sup>. Like Zabarella, he foreshadowed the work of Suarez, and anticipated a strand of seventeenth-century non-Aristotelian psychology.

Piccolomini believed that the mind is capable of directly judging the content of sensory representations<sup>106</sup>, and that this very act is the generation of intelligible species, that is, of knowledge. This position in a sense prepared the way for Suarez's view of the generation of intelligible species. It may also be said to anticipate the Cartesian view of a mind as generating ideas when attending to patterns and motions in the brain. Similarly, Piccolomini anticipated Arnauld's view of ideas as acts with representational content. There were also important differences between their views, however. Although Piccolomini denied that sensory images may generate mental representations, he also saw the mind as *processing* sensory representations: it is by virtue of the mind that the sensible species become intelligible. Suarez and Descartes, by contrast, held that species and notions or ideas do not originate from the senses or from sensory representations, but that they are generated by the active principle of the mind, that is, by the agent intellect or by an intrinsic faculty, respectively. This active principle generates species or ideas in accordance with sensory information, without being causally determined by the phantasms or by the brain patterns.

#### 1.4. *Agostino Faba*

The only Renaissance commentary on *De anima* to be based on the humanistic translation by Périon was written by Agostino Faba<sup>107</sup>. It was published at the end of the sixteenth century<sup>108</sup>. The fact that Faba used Périon's translation may be seen as a token of his

<sup>105</sup> See ch. VI, § 1.4 and 3.3; ch. VII, § 3.2; see also the work of Porzio (ch. VII, § 4.2).

<sup>106</sup> *De humana mente*, 1226.

<sup>107</sup> Agostino Faba, fl. ca. 1596; from Savigliano (Piedmont).

<sup>108</sup> Augustinus Faba Savilianensis, *In tres Aristotelis libros De anima praeclarissima commentaria*. Nunc primum in lucem edita Ioachimo Perionio Traduttore, Augustae Taurinorum 1597.

independence vis-à-vis the mainstream of Peripatetic philosophy. This is borne out by the complete absence of references to classical authorities, to contemporary commentators, and to other psychological literature in Faba's comment on the Third Book of *De anima*. In spite of this splendid isolation, Faba did not achieve anything particularly original. Still, his work contains some doctrinal moves that are interesting from a historical point of view.

From Périon's text as reported by Faba's commentary, we may gather that the French humanist translated *eidōs* with "species"<sup>109</sup> as well as "forma"<sup>110</sup>. Also Faba used "forma" and "species" interchangeably<sup>111</sup>. For example, he stated that the receptivity of the possible intellect regards species and/or forms<sup>112</sup>. Hence, it is not surprising to find him defining the intelligible species as the object of intellective cognition, assimilating species to "quidditas"<sup>113</sup> or essence<sup>114</sup>. More remarkable, and a clear token of Faba's unreflected eclecticism, is the assimilation of species and form to notion<sup>115</sup>.

Although the systematic coherence of Faba's psychology is less than robust, it is possible to trace in it the influence of Neoplatonicizing interpretations of Peripatetic psychology, in particular as given by the Arabs and by Latins such as Albert the Great. Thus, Faba observed that the intellect is able to operate autonomously once it has received the intelligible species<sup>116</sup>. Further

<sup>109</sup> *In tres Aristotelis libros De anima*, 764, regarding the famous "lapis" passage.

<sup>110</sup> See *In tres Aristotelis libros De anima*, 766, for the "mens" as "forma formarum".

<sup>111</sup> Cf. *In tres Aristotelis libros De anima*, 664-8, 678, and 692.

<sup>112</sup> *In tres Aristotelis libros De anima*, 672-3: "(...) in pura potentia ad rerum intelligibilium formas seu species recipiendas, (...)." See also col. 668: "intellectum percipere rerum omnium species"; col. 673, where Faba defines the possible intellect as "sedes ac receptaculum specierum intelligibilium"; col. 674: "intelligere fiat per specierum intelligibilium susceptionem"; and col. 681, where the intellectual soul is defined as "formarum locus ac sedes". Cf. also col. 766.

<sup>113</sup> *In tres Aristotelis libros De anima*, 674: "(...) dicens esse rei cuiusque intelligibilis speciem & quidditatem."

<sup>114</sup> *In tres Aristotelis libros De anima*, 689; on col. 765, Faba describes the species as "similitudo".

<sup>115</sup> *In tres Aristotelis libros De anima*, 679 and 771; cf. also Piccolimini's position (*supra* subsection 3).

<sup>116</sup> *In tres Aristotelis libros De anima*, 687. Cf. Lefèvre Étapes and Bovelles (ch. VI, § 1.4).

evidence of Neoplatonic influence may be found in his view of the agent intellect. Faba believed that the agent intellect contains and knows the intelligible species in act, and that it coincides with the known object<sup>117</sup>. This position seems to clash with one of his earlier observations concerning the agent intellect as actualizing intelligible species hidden in matter<sup>118</sup>. Faba was apparently confused about the nature and function of the agent intellect; moreover, he failed to distinguish clearly between the agent intellect and the intellect in act. Indeed, elsewhere he reiterated that the agent intellect identifies itself with the cognitive object, but the possible intellect does not. In the same context, Faba stated that the possible intellect precedes the agent intellect in time<sup>119</sup>. The view suggested here is that the human intellect, which is basically one, is able by itself to pass from a state of potentiality to one of full actuality. A similar conception was implicit in Faba's view of the intellect's being actualized by sensory images<sup>120</sup>.

Reconstructing Faba's thought on this issue, we may say that the potential intellect opens itself to the species and forms that are hidden in the phantasms. It thus becomes actual by virtue of the unveiled intelligibles without any intervention of the agent intellect, which is really just the possible intellect in act. Indeed, so Faba observed, the potential intellect is directed towards potential intelligibles, while the actual intellect deals with actual intelligibles<sup>121</sup>. One problem still remains, however: how to reconcile the view of an abstracting agent intellect<sup>122</sup> with that of an intellect actualized by phantasms? Faba did not resolve this problem. He seemed more concerned with the intrinsic cohesion of perceptual and cognitive processes:

Verùm cùm visus, hominis alicuius speciem suscipit, licet eam suscipiat non suscepto subiecto in quo illa inest, tamen id non efficit nisi cum quadam ratione materiae, quoniam scilicet illam a materia immediatè assumit: ubi verò haec species ad phantasiam pervenerit, tunc ab intellectu denudatur, & spoliatur à quacunque conditione

<sup>117</sup> *In tres Aristotelis libros De anima*, 707 and 711.

<sup>118</sup> *In tres Aristotelis libros De anima*, 706.

<sup>119</sup> *In tres Aristotelis libros De anima*, 734.

<sup>120</sup> *In tres Aristotelis libros De anima*, 760-62, and 769.

<sup>121</sup> *In tres Aristotelis libros De anima*, 765.

<sup>122</sup> *In tres Aristotelis libros De anima*, 706, and 770-71.

materiae, spectaturque sine materia, & sumit nomen speciei intelligibilis: quia igitur species intelligibilis ex sensibili oritur, hac ratione dicitur in sensibili contineri: non quòd numero hae species invicem distinguantur, immo una eademque species est quae sensibilis, & quae intelligibilis dicitur, sed quatenus diversa ratione à sensu, & diversa ab intellectu spectatur, fit ratione diversa.<sup>123</sup>

All conceivable variations on the Peripatetic approach to psychology passed in review in sixteenth-century discussions of the intelligible species. The commentary on *De anima* by Agostino Faba marked the end of this era, perhaps even more so than those of Zabarella and Piccolomini. Indeed, while the views of the latter two were still sophisticated enough to open up new fields of discovery, Faba's eclectic syncretism definitively closed off an area of research.

## § 2. EN ROUTE FOR THE SEVENTEENTH-CENTURY PHILOSOPHICAL LIBRARY

### 2.1. *Species in early textbooks*

In the early fifteenth century, manuals started to appear on Aristotle's natural philosophy, including his psychology. An illustrative example is the *Summa naturalium* by Paul of Venice. This tradition carried over into the sixteenth century, where it was continued by Lefèvre d'Étaples, Taiapietra<sup>124</sup>, and Pernumia<sup>125</sup>, as well as by Reisch, Melanchthon<sup>126</sup>, and Frans Tittelmans<sup>127</sup>. Bernardi

<sup>123</sup> *In tres Aristotelis libros De anima*, 768.

<sup>124</sup> Hieronymus Taiapietra, *Summa divinarum ac naturalium difficilium quaestionum Romae in capitulo generali fratrum minorum (...) publice discussarum*, Venetiis 1506. This Venetian patrician was active around 1500; ca. 1498, he began his study of philosophy under Nifo and Bacilieri at the University of Padua; 1506, doctor artium, Rome. For discussion, see Nardi, *Saggi*, 281-312.

<sup>125</sup> Jo. Paulus Pernumia, *Philosophia naturalis*, Patavi 1570; cf. Nardi, *Saggi*, 403, note 87.

<sup>126</sup> For Melanchthon's place in this tradition, see Ch.B. Schmitt, "The rise of the textbook tradition", in *Cambridge History of Renaissance Philosophy*, 792-804, on p. 797.

<sup>127</sup> Franciscus Titelmannus, *Compendium philosophiae naturalis, seu De consideratione rerum naturalium, earumque ad suum Creatorem reductione libri XII*, Lugduni 1574. Frans Tittelmans, 1502 Hasselt—1537 Anticoli-di-Campagna (Lazio); 1518-1521, studied philosophy at the paedagogicum "Het Varken" of the University of Louvain; 1521, began teaching philosophy at "Het Varken", while studying theology at the university there; 1523, entered the Franciscan Order

composed a comprehensive manual in a single bulky volume<sup>128</sup>. Zabarella, Piccolomini, and Giulio Pace<sup>129</sup> began to expound Aristotle's natural philosophy by the order of his physical treatises, thereby establishing the pattern to be followed by the textbook tradition of later Scholasticism. The seventeenth century would be the heyday of the Scholastic manual, with manuals being composed all over Europe by laymen as well as by theologians. Different in form and style, but written with the same purpose of giving a general orientation in Aristotelian philosophy, was Cesalpino's widely read work, *Quaestiones peripateticae*<sup>130</sup>.

The sixteenth-century precursors of the textbook tradition made only a fairly modest contribution to the dispute on intelligible species. Taiapietra, Pernumia and Cesalpino did not discuss the problem at all, while Bernardi restricted himself to endorsing a generic "communis opinio"<sup>131</sup>. Also Tittelmans adhered to a conventional view of species<sup>132</sup>. Like some medieval friars, he argued

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there; 1523-1536, taught philosophy and theology at the school of the order there; 1536, entered the O.F.M. Cap., Rome; 1537, provincial of the Roman province of the order. For discussion, see Schmitt, "The rise of the textbook tradition", 795-96. Tittelmans was a link between the humanist tradition of Erasmus and Lefèvre and the Franciscan tradition; he would enjoy remarkable popularity in the 17th century.

<sup>128</sup> Ioan. Baptista Bernardi, *Seminarium totius Philosophiae*, Venetiis 1582, counting nearly 1500 cols. folio.

<sup>129</sup> Julius Pacius, *In libros De anima commentarius analyticus*, in *Aristotelis De anima libri tres, graece et latine*, Iul. Pacio a Beriga interprete, Francofurti 1596. Giulio Pace, 1550 Beriga (Borgo in Vicenza)—1635 Valence; 1565-70, studied philosophy at the University of Padua; 1570-1574, studied law there; fled due to religious persecution; 1575-1585, taught philosophy privately and law publicly but gratis, Geneva; 1585-1635, professor in Heidelberg (law), Sedan (logic), Nîmes (philosophy), Montpellier (law), Valence (law), Padua (law), Valence (law).

<sup>130</sup> Andreas Caesalpinus, *Peripateticorum Quaestionum Libri Quinque*, Venetiis 1571. Andrea Cesalpino, 1519/24 Arezzo—1603 Rome; studied arts (under Simone Porzio) and medicine at the University of Pisa; 1551, doctor artium et medicinae there; 1556-1570, professor of botany there; 1570-1591, professor of medicine there; 1592-1603, professor of medicine at the "Sapienza" and physician to Clement VIII, Rome.

<sup>131</sup> Ioan. Baptista Bernardi, *Seminarium totius Philosophiae*, refers on p. 283ra incidentally to the intelligible species: "Species non sunt intelligibiles in actu, nisi quia sunt abstractae a phantasmatis."

<sup>132</sup> See *Compendium philosophiae naturalis*, 344, regarding the reception of the species; p. 348, on the agent intellect producing species; p. 351, where the multiplication of species until the level of the inner senses is accepted; on p. 366-7, Tittelmans argued for intellectual memory. On p. 367, he endorsed the Augustinian ternary structure of human soul.

for the existence of species of separate substances and of God<sup>133</sup>. In spite of its conventional outlook, this work is interesting for its emphasis on the fact that innate species cannot be reconciled with Christian faith, as the latter entails the creation of the soul with the body<sup>134</sup>. In Pace's elegant humanist commentary on *De anima*, which was widely studied, particularly in northern Europe, the species were simply identified with intelligible forms<sup>135</sup>.

## 2.2. Scaliger's *Exercitationes* and Goclenius' first reaction

Julius Caesar Scaliger stands apart from mainstream Aristotelianism because of his philosophical pluralism and his independence vis-à-vis earlier Peripatetic masters, of whom he mentioned (in the introduction of his *Exercitationes*<sup>136</sup>) Buccaferrea, Pomponazzi, Zimara, Bacilieri, and Nifo<sup>137</sup>. Scaliger's *Exercitationes* were written as a running commentary on Cardano's *De subtilitate*, which gave the work a special place in the tradition of Renaissance Aristotelianism. Although it did not answer to the stereotype of a philosophical textbook, in the seventeenth century the work was generally esteemed as a comprehensive introduction to Peripatetic philosophy. It was widely read in Catholic as well as in Protestant countries. Indeed, it is hard to find a seventeenth-century author who did not cite from this work<sup>138</sup>.

<sup>133</sup> *Compendium philosophiae naturalis*, 38 and 354; cf. the position developed by William de la Mare, *Correctorium*, in [Richard Knapwell], *Le correctorium corruptorii "Quare"*, ed. P. Glorieux, Le Saulchoir-Kain 1927, art. I and II, pp. 1-17; cf. also ch. III, § 2.4. The need for (intelligible) species was a controversial issue in the medieval debate on the beatific vision of Christ; see also ch. IV, § 1.1.

<sup>134</sup> *Compendium philosophiae naturalis*, 347.

<sup>135</sup> *In libros De anima commentarius analyticus*, 367-68, and 411.

<sup>136</sup> *Exotericarum exercitationum libri XV de Subtilitate ad Hieronymum Cardanum*, Francofurti 1576. For discussion, see M. Billanovich, "Benedetto Bordon e Giulio Cesare Scaligero", in *Italia medioevale e umanistica* 11(1968), 187-256; P. Landet, "L'aristotélisme 'périgrin' de Jules-César Scaliger", in *Études philosophiques* 61(1986), 349-69.

<sup>137</sup> *Exercitationes*, f.\*ij<sup>v</sup>; see also Billanovich, "Benedetto Bordon e Giulio Cesare Scaligero", on p. 237; Landet, "L'aristotélisme 'périgrin' de Jules-César Scaliger", 354.

<sup>138</sup> See, among others, C.F. d'Abra de Raconis, *Totius philosophiae (...) tractatio*, Avenione 1639-1641, 317b; Sebastiano Basso, *Philosophiae naturalis adversus Aristotelem libri XV*, Amsterodami 1649, 117f; Antonius Deusingius, *De anima humana dissertationes philosophicae*, Hardervici 1645, 17; cf. also ch. XII, § 1. Gassendi, *Opera*, vol. II, 446B, refers to Scaliger's rejection of a real distinction

At the outset of the *Exercitationes*, Scaliger referred to the species as “nota”, that is, the fourth stadium of “repraesentatio”, a qualification he repeated elsewhere<sup>139</sup>. It is not until “Exercitatio” 307, however, that Scaliger turned to the species issue in a systematic way. A substantive modification of the traditional doctrine is found in chapter 6, where he relativized the real union of intellect and received species<sup>140</sup>. Chapter 7 deals with a problem for which Scaliger would be cited many times, namely, how cognition based on accidental species is able to grasp substantial essences. Scaliger was by no means the first to raise this problem, which in bygone times had puzzled Richard of Middletown and other medieval writers<sup>141</sup>. In conformity with the crucial role assigned to the intellect in the generation of species, Scaliger decided that the soul forms the species of substances on the basis of species of accidents which originate from the perceptual faculties<sup>142</sup>.

Scaliger blurred the distinction between possible and agent intellect, as was later also done by many other schoolmen. He no longer accepted the traditional, sharp distinction between a passive, knowing intellect on the one hand, and an active but un-knowing intellect on the other<sup>143</sup>. Scaliger regarded the cognitive act as an operation of the knowing and active intellect<sup>144</sup>. Hence, it became inevitable that mind should be detached from any process of actualization conceived in terms of Aristotelian physics.

With regard to the various moments involved in the cognitive act, Scaliger's outlook was fundamentally different from that of Zabarella and Piccolomini. He made a clear distinction between

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between agent and possible intellect; cf. also below. Robert Boyle cited Scaliger on several occasions in support of his claim that the substantial essences cannot be known; cf. Robert Boyle, *The Origin of Forms and Qualities According to the Corpuscular Philosophy*, in Robert Boyle, *Selected Philosophical Papers*, ed. M.A. Stewart, Manchester 1979 (first published in 1666), 13, 54, 59, and 67. Richard Burthogge, *An Essay Upon Reason, and the Nature of Spirits*, London 1694, 165, mentions Scaliger in the context of an analysis of “spiritus”.

<sup>139</sup> Cf. *Exercitationes*, p. 8 and 261.

<sup>140</sup> *Exercitationes*, 931.

<sup>141</sup> Ch. III, § 4.2; see also Giles of Rome, Thomas Sutton, James of Viterbo, and John of Jandun.

<sup>142</sup> *Exercitationes*, 932-33.

<sup>143</sup> See also Bovelles (ch. VI, § 1.4), the Neoplatonics discussed in ch. VIII, § 1, Piccolomini (subsection 1.3), and Faba (subsection 1.4).

<sup>144</sup> *Exercitationes*, 951.



intellectual reception and the discursive reasoning based on it. The intellection as “prima apprehensio notionum” he characterized as “passio”<sup>145</sup>. In his reconstruction of the cognitive process, Scaliger accepted as unproblematic that the species is prior the mental act:

Quattor ergo sunt. Primum, quod educit speciem è materia: puta lux ad visionem. Alterum, species, quae educitur. Tertium, ipsa impressio speciei in intellectum. Quartum, intellectus.<sup>146</sup>

If the species were coincident with the act, then the distinction between content and act would be blurred. With the species being neither the act nor the cognitive object, Scaliger described it as a “modus intelligendi”:

Neque est species obiectum intellectionis: sed intelligendi modus. Non enim est, sicut repraesentatio in speculo ad sensum: qui non discurrit. At intellectus recepta specie exinuat seipsum, atque ipsam speciem cognoscit, esse rei notionem, non autem rem.<sup>147</sup>

When the species or “notio rei” is received, knowledge of the thing itself becomes possible. In this context Scaliger also came back to the issue of the knowledge of substances. His initial enthusiasm for the abstraction of the intellect has now made place for genuine bewilderment: Scaliger frankly professed that he did not see how knowledge of substances could ever be founded on accidents<sup>148</sup>. His stressing this point may well be seen as Scaliger’s main contribution to the discussion on intelligible species<sup>149</sup>.

Scaliger’s *Exercitationes* were immensely popular, as is also indicated by the fact that Rudolph Goclenius thought it necessary to

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<sup>145</sup> *Exercitationes*, 959; see also 960: “Cum ergo ad rem ipsam sine ullo discursu transmittit notio ad intellectum: mera passio est.” For a similar definition, see already the post-Jandun Averroists discussed in ch. IV, § 4. It is rather strange to note that he rejected the existence of an intellectual memory (982-83), and yet stated that the species are stored in memory. He did not further explain how a dematerialized form could ever be preserved in a sensible faculty. Apparently, he did not see this as particularly problematic.

<sup>146</sup> *Exercitationes*, 959.

<sup>147</sup> *Exercitationes*, 960.

<sup>148</sup> *Exercitationes*, 960; see p 961: “Quare in re tam perplexa, cum difficultas afferat secum excusationem: excusatio persuasit nobis, ut his in tenebris auderemus connivere. Substantias non sua specie cognosci à nobis, sed per earum accidentia.”

<sup>149</sup> Other remarkable aspects of Scaliger’s position are his acceptance of innate species, and the view that not the universals, which exist outside the soul, but their species are to be found in the intellect; cf. *Exercitationes*, 962-64.

compose a lengthy refutation of it<sup>150</sup>. On the issue of species Goclenius did not so much examine Scaliger's reasoning itself, but rather submitted a terminological elucidation<sup>151</sup>. Indeed, he did not quarrel with the view that our mind grasps first the species as notion, and then knows the represented object<sup>152</sup>. Goclenius rejected Scaliger's identification of possible and agent intellect, however, although he subjoined that they differ only "ratione"<sup>153</sup>. Remarkably, Goclenius did not oppose the existence of species *sumphytoi*<sup>154</sup>.

Also other early works by Goclenius, such as the *Physicae disputationes*<sup>155</sup>, show the influence of Scaliger's views on cognitive psychology. Thus, Scaliger was cited in *disputatio* XXXI, "De ratione humana", which deals with the problem of the knowledge of substances<sup>156</sup>. Also the distinction between the four moments of the "intellectio recta" (previously characterized as a perception through intelligible species<sup>157</sup>) was derived from Scaliger<sup>158</sup>. Like Scaliger, Goclenius emphasized the distinction between intelligible species and intellection, and rejected Zabarella's identification of

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<sup>150</sup> *Adversaria ad Exotericas aliquot Julii Caesaris Scaligeri acutissimi philosophi exercitationes*, Marpurgi 1594. Rudolphus Goclenius, Corbach 1547—Marburg 1628; polymath, active in natural philosophy, grammar, logic, psychology, and poetry; studied in Corbach; 1564, studied at the University of Marburg; 1568, studied at the University of Wittenberg; 1571, magister there; 1581, professor of natural philosophy, Marburg; 1589, professor of logic there; 1597, published *PSYCHOLOGIA*, a kind of anthology. In ch. XII, § 4.1, I analyze his views on species as found in his philosophical lexica.

<sup>151</sup> See *Adversaria ad Exotericas exercitationes*, "ad 307.20", p. 195: "Res ipsa est obiectum intellectus, quo movetur intellectus ad intellectionem, id est, primam apprehensionem notionum, quae est receptio & impressio speciei in intellectum, ideoque animi passio quaedam."

<sup>152</sup> *Adversaria ad Exotericas*, 196.

<sup>153</sup> *Adversaria ad Exotericas*, 217.

<sup>154</sup> *Adversaria ad Exotericas*, 219-20.

<sup>155</sup> *Physicae disputationes in septem libros distinctae*, Francofurti 1598.

<sup>156</sup> See *Physicae disputationes in septem libros distinctae*, 547, where Scaliger is quoted twice.

<sup>157</sup> *Physicae disputationes in septem libros distinctae*, 547.

<sup>158</sup> *Physicae disputationes in septem libros distinctae*, 548-49: (1) the eduction of species from matter; (2) the elicited species; (3) the impression of the species in the intellect; (4) the intellectual grasp of the represented content. Cf. *Exercitationes*, 959 (quoted above).

the two<sup>159</sup>. In both works mentioned here Goclenius accepted the existence of inborn “communes notiones”<sup>160</sup>.

### § 3. RENAISSANCE COGNITIVE PSYCHOLOGY: TRANSITION AND ANTICIPATION

The doctrine of intelligible species was an integrating part of the heritage handed down from Scholastic philosophy to the Renaissance. The notion of species was the object of inquiry for a large and variegated train of writers, including fifteenth-century Platonists, mainstream Renaissance Aristotelians, and late sixteenth-century naturalists. The Renaissance discussion remained close to that of the Middle Ages in terms of terminology and general conceptual framework, determined by the Moerbeke translations. There were also important differences, however. Around the turn of the fifteenth and sixteenth century, many philosophical works of ancient authors became available, considerably enriching the context of discussion for traditional issues like that of the species. Moreover, humanist scholars developed new philological tools for the interpretation of ancient texts, leading to new types of argumentation in the analysis of philosophical questions.

I begin this section with a brief retrospective of the disputes on intelligible species in the fifteenth and sixteenth centuries. In the

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<sup>159</sup> *Physicae disputationes in septem libros distinctae*, 578: “Speciem intelligibilem ratione tantum distingui ab intellectione, ut Zabarella sentit, non sentimus.” See also the reference to Zabarella on p. 547.

<sup>160</sup> *Physicae disputationes in septem libros distinctae*, 552-53. With regard to inborn common notions, see also the concept of species *sumphytoi*, in *Adversaria ad Exotericas*, 219. The view of inborn common notions may have been influenced by Cicero’s nativist interpretation of the Stoic common principles; cf. *Topica*, VII.30: “Notionem appello, quod Graeci tum *énnoian* tum *prólepsis*. Ea [sc. notio] est insita et animo praecepta cuiusque cognitio enodationis indigens”. This nativism was based on the Stoic identification of the Epicurean *prolepsis* and the notion, which is also found in the Greek-Latin edition of ps.-Plutarchus [=Aetius], *De placitis philosophorum*, Florentiae 1750, IV.11, 107. The Stoic appropriation of the *prolepsis* would reappear during the Renaissance in Justus Lipsius; cf. his *Manuductio ad Stoicam philosophiam*, in *Opera*, 4 vols., Wesel 1675, vol. IV, 706f. Cf. also ch. I, § 1.4.1-2. However, also the influence of Melanchthon cannot be ruled out. Melanchthon was mentioned on p. 545; for his specific nativism, see ch. VII, § 3.1.2.

second part I draw together the main strands of development that took place on this issue during the Renaissance.

### 3.1. *Retrospective survey*

After the rediscovery and translation of Neoplatonic works bearing on the species debate, the first signs of their influence on the issue can be traced in the work of Pico della Mirandola and Ficino, main exponents of the Florentine Academy. They attempted a reconciliation between the Platonic view of mind and the Scholastic conception of mental representation. This led them to reconsider a central tenet of Aristotelian cognitive psychology, namely, the sense-dependency of intellectual knowledge. Pico and Ficino regarded the human soul as “nexus mundi” rather than as “forma corporis”. They believed that cognitive activity is not principally dependent on the stream of information from the senses. Knowledge acquisition is grounded in the affinity between the soul and the ideal structure of reality and its source. Pico fostered fundamental doubts about the need for species, arguing that the soul has direct access to the objects of cognition, while Ficino presumed the latter to be latently present in the soul. Sensory representations no longer serve as a basis for mental content; rather, they are only the imperfect traces of ideal patterns. In this context, the intelligible species are assimilated to the contents of cognition, and intellectual abstraction is substituted by a reception of the products of a cosmic metabolism.

Cusanus departed from Platonic as well as from Aristotelian psychology, yet without totally rejecting them. His view of the mind as “vis concipiendi” was obviously inspired by the conception of man as a microcosm, one of the central tenets of fifteenth-century Neoplatonism. All in all, Cusanus put forward a remarkably original conception of the acquisition of empirical knowledge, in which the notion of species plays a crucial role. Intermingling with the physiological spirit, the mind makes contact with the mechanically transmitted effects or species of the external bodies; by virtue of its innate dispositions, which are called intelligible or formal species, it then generates mental representations of sensible forms. Against the same philosophical background, Bovelles endorsed the

need for intelligible species in a cognitive psychology dominated by a view of the mind as “opifex” of its cognitive contents.

In the late fifteenth century, various exponents of the School of Padua cast serious doubts on the need for intelligible species, basing themselves on a close reading of the texts of Aristotle and Averroes. Achillini and Nifo, for example, developed a new style of philosophical argumentation. Arguments that had figured crucially in the medieval opposition against species, such as the immateriality of the intellectual soul and the impossibility of its dependence on sensory representations, now lost their importance and were replaced by philological arguments and by more fine-grained logical analysis. Thus, it was argued that the notion of species is spurious, because (1) it does not occur in the works of Aristotle and Averroes, and (2) it is incompatible with central tenets of Aristotelian psychology. The notion of an intelligible species as being received and preserved in the intellect clashes with Aristotle’s elimination of an intellectual memory. Moreover, it brings about the threat of an infinite regress in the cognitive process. Also, it violates the principle of the excluded middle, for it cannot be established what the species exactly ‘is’, whether substance or accident, potentially intelligible or actually intelligible, and so forth. Meanwhile, there were also a number of theological interferences with the debate in psychology, most notably including that of the Barozzi enactment, which led Nifo to change his mind on Averroes’ interpretation of Peripatetic psychology, and thus to retract his earlier rejection of intelligible species. Theological considerations concerning the “fidei fundamenta” or the “veritas rei” also played a crucial role in the psychology of Marcello and Mocenigo.

At the beginning of the sixteenth century, Pomponazzi and Zimara countered these attacks on the species with rather traditional defences, leaning heavily on the Scholastic and Averroist tradition of the Middle Ages. At about the same time, the first authoritative exponents of the Second Scholasticism came up with novel accounts on a closely related issue, namely, that of the illumination of sensory representations by the agent intellect. Caietanum and Ferrara proposed views on this topic that were to play a crucial role in the psychology of many later schoolmen. In

the course of the sixteenth century, the traditional defences in behalf of the intelligible species would be questioned by Girelli and Porzio.

If we look at the dispute on species in sixteenth-century Italy, two phenomena stand out as particularly important. They anticipated in a way characteristics of early modern, non-Aristotelian psychology. In the first place, we see a diffusing tendency to accept Nifo's idea of interpreting the species as notion. Authors such as Buccaferrea and Vimercato argued for the coherence of mental representation and cognitive act, while others such as Castellani and Montecatini tacitly assimilated species and content. Secondly, with the massive injection of Simplician views into the framework of Peripatetic psychology, the reception of the views of Greek commentators in Renaissance psychology entered a new phase. Genua's attempt to combine Simplician noetics with Averroes' interpretation of Aristotelian psychology resulted in a highly peculiar brand of 'sense-dependent innatism': intelligible species are innate, but they depend on corresponding phantasms for their actual presence to the mind. As we shall see later, both the coherence between act, representation, and content (which had already been argued by Lefèvre d'Étaples) and the endorsement of sense-dependent, dispositional nativism were central concerns of Descartes' psychology of cognition.

The final disputes on intelligible species among Renaissance philosophers coincided with the rise of a new philosophy, as prepared by Telesio, Bruno, and Campanella. Telesio grounded the acquisition of knowledge in sensation, that is, in the tactile contact between the material soul and sensory stimuli. His naturalism *ipso facto* eliminated the need for formal mediation at the mental level. This distinguished his position from earlier naturalist projects such as Fracastoro's. According to Telesio, intellection is just the reconstruction of sensible reality on the basis of fragmentary sensory information. Telesio's epistemology inspired Campanella's refutation of the doctrine of sensible and intelligible species. It is significant that Telesio and Campanella both emphasized the role of motion in the generation of perception. Giordano Bruno's equation of intelligible species and mental content was modelled on Platonic views. The fact that he integrated traditional psychology into a

metaphysical account of the structure of reality, revolutionized by the new cosmology, marks him as a transitional figure between two great eras in philosophy. Zabarella and Piccolomini, the last authoritative exponents of Renaissance Aristotelianism, approached the issue of species from a different philosophical perspective. They argued for an integration of the first two operations traditionally attributed to the intellect, that is, simple apprehension and judgment.

### 3.2. *Systematic evaluation*

The Renaissance discussions on cognitive psychology in general, and the dispute on intelligible species in particular, made significant contributions to philosophy on the following points: (1) the nature and function of (un)conscious principles involved in the cognitive process; (2) the role of innate dispositions or contents in the generation of knowledge; (3) the relation between the simple apprehension of undivided objects and the mind's conscious and discursive operations.

#### 3.2.1. New views of intelligible species

Ancient philosophers used the notion of an (intelligible) species as equivalent for the Platonic idea. As early as Augustine, the term 'species' occurred in psychological contexts, where it indicated the image or likeness of a perceived object in the senses and in the intellect. In the Middle Ages, this usage was consolidated in Scholastic theories of perception and knowledge. The medieval controversy over intelligible species was constrained primarily by Aquinas' conception of the intelligible species as a sense-dependent mental representation, grounding the mind's knowledge of material reality. After Aquinas, various shifts of meaning occurred: most notably, many critics of Thomistic cognitive psychology came to interpret the species as intellection, and also as mental content, whether innate or mnemonic.

The traditional doctrine of intelligible species presupposed a ternary relation between a *representation* that gives the mind an intelligible *content* and that grounds the mental *act*. In the course

of the Renaissance disputes, a whole variety of meanings and functions were attributed to the species. With some notable exceptions, the framework for discussing the species was generally still that of representation, content, and act. In contradistinction to the Middle Ages, it is remarkable to note how few authors of the Renaissance (Pomponazzi, Zimara, Ferrara, and Javelli) took the intelligible species as mediate and unknown mental representations, distinct from both content and cognitive act. Most often the species were assimilated to either the known object or to the cognitive act, and sometimes to both, as in Lefèvre d'Étaples. As noted earlier, the intimate connection of mental act, representation, and content was to be a crucial feature of seventeenth-century theories of ideas, as developed by Descartes, his followers, and John Locke.

The motives for assimilating species to content came from a number of different directions. A naturalist philosopher such as Bacilieri wanted to avoid controversies with the doctors "in via communi", and therefore interpreted the species as the known form of a material thing. In a similar vein, Castellani and Faba used 'species' and 'form' as interchangeable terms. By contrast, Pico suggested that the intelligible species stands for the eternal structure of reality to which the mind has direct access, while Ficino assimilated the species to innate "formulae". From a different point of view, Cusanus identified the intelligible species with dispositional structures of the mind. Genua rejected the traditional notion of sense-dependent intelligible species, reinterpreting it as potential, innate mental content. A somewhat singular position was taken by Caietanus, who distinguished between the objectively intelligible and the formally intelligible, corresponding to the illuminated phantasm and the intelligible species, respectively. On his view, the illuminated phantasm serves as the basis of the mind's grasp of intelligible objects; here the intelligible species is not a mediator of cognition, but rather an outcome of the cognitive act.

The assimilation of species and act (simple apprehension or primary cognitive act) was argued by early representatives of the Paduan School, such as Achillini and Nifo. The driving force behind their position was the idea that knowledge cannot depend on any prior actualization of the mind by the species, as this would entail the contradictory claim that the mind knows before it effec-



tively grasps its objects. Also Tignosio identified species and mental act, as did Zabarella and Piccolomini, arguing from different perspectives. Zabarella argued that received intelligible species serve as the basis for the mind's relation to sensible reality. The species may be identified with the intellective act, insofar as this act depends on the phantasm's causing a primary specification of the mind. Piccolomini, by contrast, believed that the cognitive act does not entail any intellectual receptivity; he argued that the mind produces its act or species in judging the intelligible content of the phantasms.

Highly significant from a historical point of view was the interpretation of species as idea or notion in the Renaissance debate. Referring explicitly to the Aristotelian *noema*, Nifo argued that "notio" is the only sensible interpretation of intelligible species. Thus, he looked upon the intelligible species as a mental act with representational content. This view had been suggested earlier by John of Malinas, and it may also be found in the works of Buccaferrea, Vimercato, Montecatini, and Piccolomini. Fracastoro associated the species with a "subnotio", that is, a representation of particular features of material reality, presented to the intellect by the phantasms, and serving as a basis for intellectual knowledge. This view was probably influenced by the Epicurean or Stoic notion of *prolepsis*, and as such it may be seen as a forerunner of Gassendi's theory of ideas. Porzio noted that "idea" is one of the meanings associated with the intelligible species; however, this meaning played no role of significance in his argument against species. Earlier I mentioned the assimilation of species and innate content by early Renaissance Neoplatonics. In the course of the sixteenth century, this position was resumed and elaborated by authors such as Genua. More explicitly, the intelligible species was identified with (man's) ideas by Polo, while also Agnello used intelligible species and ideas interchangeably. Giordano Bruno's ideal shadows had connections to notions as well as to ideas. Equally influenced by Neoplatonic metaphysics and by Scholastic psychology, Bruno assigned to the species, or the shadow, a function in our grasping sensible forms as well as separate intelligible objects. He saw the species as an intramentally generated notion,

representing the ideal or formal structure of natural reality at the level of the human mind.

### 3.2.2. Theories of knowledge acquisition

Traditional Peripatetic epistemology looked upon perception and sensory representation as the basis for acquiring intellectual knowledge. This view was also shared by alleged anti-Aristotelians such as Telesio and Campanella, who challenged other aspects of Peripatetic psychology, however, notably including the doctrine of species. Their criticism prepared the way for the non-Aristotelian psychologies of the early seventeenth-century. Renaissance Aristotelians only rarely abandoned the sense-dependence of cognition. Still, the traditional view was criticized from several directions. In discussions of the mind's "subjective" and "objective" reception of species and objects, respectively, it frequently happened that writers swerved from the physicalist framework of Peripatetic psychology. This applies in particular to critics of the species doctrine, such as Nifo, Girelli, Porzio, and Piccolomini, who explained the generation of knowledge in terms of a mental or cognitive response to sensory stimuli. Often, however, the proliferation of modes of existence, or of meanings of the term "exist", stood in the way of giving a satisfactory explanation of knowledge, as is illustrated by the case of Girelli. Also Caietanus' doctrine of an 'objective' illumination must be understood against the background of this debate on "subjective" and "objective" reception. Although he held on to the sense-dependence of intellection, Caietanus denied the possibility of a direct causal impact of sensory representations on the generation of knowledge.

The nativist interpretations of Aristotelian psychology opened up a new outlook on knowledge acquisition. Many Renaissance authors endorsed a traditional Platonicizing style of nativism with regard to content. Ficino, Mocenigo, and Teofilo Zimara, for example, held that the actualisation of the mind's innate contents is only occasionally dependent upon the phantasms. They either rejected sense-dependent intelligible species or simply assimilated them to innate contents. More interesting was the position of Cusanus and Genua, who assigned the generation of knowledge to

the intrinsic capacities of the human mind. Empirical knowledge requires that the mind makes contact to the sensible realm, however, projecting itself through the senses. They accordingly argued for a crucial role of sensory representation in empirical knowledge. Cusanus saw the mind as a cognitive engine which develops knowledge by virtue of innate dispositions rather than innate contents. He accounted for the effective grasp of the sensible world in terms of the interaction between mind and spirit, where the latter is supposed to make up the sense organs. Genua developed a most peculiar brand of sense-dependent nativism, such that the mind generates its representations of sensible forms on the occurrence of the corresponding phantasms. Actual intellectual knowledge depends crucially on sensory images, because the mind has no intellectual memory at its disposal. Cusanus and Genua foreshadowed features that would later become crucial for the views of Suarez, Descartes, and many later Cartesians with regard to the acquisition of knowledge of the material world.

### 3.3.3. Abstraction and attention

The Renaissance debate on intelligible species witnessed important changes in the overall view of the cognitive process. Various tendencies that had already been present in the psychology of some medieval authors, now came to the fore in a more pronounced manner. In the first place, the distinction between mental act, representation, and content tended to be blurred. Secondly, the knowledge of individuals, insofar as it is based on species, tended to be seen as prior to the knowledge of universals. Thirdly, new accounts were given of the operations of the intellect as distinguished by tradition.

As we have seen, Renaissance authors only rarely regarded the intelligible species as an unconscious representation, distinct from cognitive act and mental content; rather, they tended to stress the essential coherence of the various aspects of the act of knowledge. In general, the illumination of phantasms was supposed to take over the role of intellectual abstraction. The agent intellect processes sensory images in such a way that the possible intellect may

directly acquire mental contents. Among the proponents of this view we find Caietanus, Girelli, Porzio, Castellani, and Zabarella.

Already Thomas Wilton and Paul of Venice had argued that the illuminated phantasms may account for the generation of intelligible species representing individual essences. These first-order species enable the mind to abstract universals. A large number of Renaissance authors, including Lefèvre d'Étaples, Fracastoro, Nifo, Pomponazzi, Melanchthon, and Zabarella, held that each intelligible species is bearer of a particular content. Apart from the mainstream, Zabarella took the exceptional view that the intellect may already have a confused knowledge of material particulars on the basis of non-illuminated phantasms. Some authors such as Bovelles and Lefèvre, possibly under the influence of the medieval Neoplatonic or Albertistic tradition, distinguished between a sense-dependent and a sense-independent stage of intellectual cognition. Like Gregory of Rimini, Cusanus endowed the mind with the capacity to engender intellectual and artificial species on the basis of sensible species. The view that knowledge is primarily of singular essences will be the common opinion among later schoolmen.

A number of medieval authors of Augustinian inspiration had objected against the species doctrine that empirical knowledge requires the conscious attention of the mind for all information delivered by the senses. This objection, which may be found in Peter Olivi, for example, later recurred in schoolmen such as Suarez and Rubio. In the Renaissance, basically the same view was taken by naturalist proponents (*sic*) of the species, such as Fracastoro and Zabarella. The view that the acquisition of knowledge requires the mind's conscious attention for the deliveries of the senses, was intimately connected to the rejection of the classical theory of perceptual and cognitive faculties, which we find in many other authors as well. Already Alhazen had made a case for the mutual interdependence of sensitive and rational capacities in the generation of knowledge, thus implicitly rejecting any hierarchical relation between sense and intellect. Buridan came close to adumbrating a modern-day form of functionalism with regard to the mental when he said that the human soul is an undivided "potestas" characterized by various operations. In addition to blurring the distinction between perceptual and intellectual operations, he emphasized the

unity of the agent and the possible intellect. Also many Renaissance authors, such as Pico della Mirandola, Bovelles, Genua, Faba, and Scaliger, identified the possible and the agent intellect. More significantly, Cusanus, Telesio, and Bruno rejected the view that the mind is composed of separate powers such as sense, imagination, and intellect. Telesio looked upon sensation as the basis of all knowledge, regarding intellection as a mental reconstruction. Cusanus and Bruno believed that the various perceptual and intellectual capacities and skills are manifestations of the self-same spiritual force, which they called mind or intellect, thus grounding the acquisition of knowledge in mental capacities and dispositions. The view that the mind must consciously attend to sensory information, and the rejection of traditional faculty psychology, are two interrelated themes that would become central tenets of modern, non-Aristotelian psychology of cognition.

**PART TWO**

**LATER SCHOLASTICISM AND THE ELIMINATION OF THE  
INTELLIGIBLE SPECIES IN MODERN PHILOSOPHY**



## INTRODUCTION

### § 1. SCHOLASTIC PSYCHOLOGY ON THE IBERIAN PENINSULA

After the conquest of Granada and the definite expulsion of the Maurs, Spain lived its “siglo de oro”. The close observance of the true Christian faith was seen as a warrant for political unity by the ruling authorities. In consequence of this, most intellectual achievements, including those in the realm of philosophy and science, were intimately bound up with the Church. Spain remained relatively untouched by the tumultuous developments of Renaissance thought, and by the religious rift of the Reformation. All in all, this situation created on the Iberian peninsula the optimal spiritual conditions for a renaissance of Scholastic philosophy.

A powerful impulse for the resurgence of Scholastic thought was the Council of Trent, other catalysts being the early sixteenth-century revival of Thomism and the rise of the Jesuit Order<sup>1</sup>. By founding a train of schools, colleges and universities, the Jesuits made an important contribution to the spreading of learning among Catholics. King John III of Portugal supported the foundation of their institute for the instruction of missionaries in Coimbra, which was to become a major center of late scholastic learning. The Jesuits did not meet with a similarly favourable reception in Spain, however. The Spanish crown was suspicious of their absolute obedience to Rome, and the Mendicant orders feared them for their competition. Nonetheless, in 1548 the first Jesuit *studium* was founded in Salamanca, another bulwark of later Scholasticism. The institute was led by a pupil of Peter Crockaert, Francisco de Vitoria, who initiated an important tradition of stud-

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<sup>1</sup> As we have seen in Volume One, ch. V, § 2, the origins of the revival of Thomistic philosophy should be sought in the works of Capreolus, Versor, and Crockaert, which led up to the first generation of Thomas commentators, such as Caietanus, Sylvester of Ferrara, and Javelli (see ch. VII, § 2).



ies in the philosophy of law<sup>2</sup>. Like Crockaert before him, Vitoria replaced Lombard's *Sentences* with Aquinas' *Summa theologiae* as the authoritative textbook in Scholastic theology and philosophy. This decision was ratified by the Council of Trent in 1561<sup>3</sup>. With the second generation of schoolmen, that is, the one coming after Vitoria's<sup>4</sup>, Spanish Scholasticism reached the pinnacle of its career. The voice of its main spokesmen (Suarez, Toletus, and the College of Coimbra) would carry well into the seventeenth century and even reach the Protestant universities in Germany and the Dutch Republic<sup>5</sup>.

With regard to the subject of this study, the sixteenth-century renaissance of Scholastic philosophy should not be seen as a conservative reaction *tout court*, but rather as the final creative stage of Peripatetic cognitive psychology. Indeed, the abundance of quotations from great medieval masters may easily be taken to suggest otherwise<sup>6</sup>. However, in comparison with the traditional

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<sup>2</sup> On Salamanca, see A. Guy, *Esquisse des progrès de la spéculation philosophique et théologique à Salamanque au cours du XVI<sup>e</sup> siècle*, Paris 1943. On Francisco de Vitoria, cf. A. Guy, "L'école de Salamanque", in *Aquinas* 7(1964), 274-308, p. 277. For the pre-Jesuit Salamanca, see V. Muñoz Delgado, "Hombre, conocimiento y logica en Juan de Oria", in *L'homme et son destin au Moyen Age*, Louvain-Bruxelles 1960, 610-621. This Juan de Oria wrote a *Tractatus de conceptu*, (Salamanca 1518), in which he defended the need for intelligible species (cf. f. 52v).

<sup>3</sup> See E. Caruso, *Pedro Hurtado de Mendoza e la rinascita del nominalismo nella Scolastica del Seicento*, Firenze 1979, 12; H.J. Müller, *Die Lehre vom verbum mentis in der spanischen Scholastik*, Münster 1968, 12.

<sup>4</sup> Authoritative spokesmen of the first generation were Domingo Soto (1494—1560) and Melchior Cano (1509—1560). They both held the chair of theology in Salamanca; cf. Guy, "L'école de Salamanque", 286-287; see also J. Ferrater Mora, "Suarez and modern philosophy", in *Journal of the History of Ideas* 14(1953), 528-547, on p. 536.

<sup>5</sup> See K. Eschweiler, "Die Philosophie der spanischen Spätscholastik auf den deutschen Universitäten des siebzehnten Jahrhunderts", in *Spanische Forschungen der Görresgesellschaft* 1(1928), 251-325, on p. 262f; P. Petersen, *Geschichte der aristotelischen Philosophie im protestantischen Deutschland*, Stuttgart-Bad Cannstatt 1964; Ch.B. Schmitt, "Philosophy and science in sixteenth-century universities", in *The Cultural Context of Medieval Learning*, eds. J.E. Murdoch & E.D. Sylla, Dordrecht-Boston 1975, 485-530, on p. 511; idem, "Towards a re-assessment of Renaissance Aristotelianism", in *History of Science*, 11(1973), 159-193, 163f. German university curricula would be dominated by the Scholastic textbook tradition until Wolff.

<sup>6</sup> In Salamanca, there were a "cathedra Thomae" and a "cathedra Scoti". Moreover, there was a lively interest in the nominalist tradition, in particular in the works of Marsilius of Inghen and Gabriel Biel. Subsequently, a "cathedra

orders, such as the Franciscans and the Dominicans, the Jesuits enjoyed a relatively large freedom from doctrinal constraints, as they were not bound to defending medieval masters from their own ranks<sup>7</sup>. Moreover, they generally recognized the value of the new philological tools for the exegesis of historical works and the reinterpretation of tradition<sup>8</sup>. According to the leading authors, the careful reading of Aristotle's texts was not an aim in itself<sup>9</sup>, but rather an instrument for developing a form of philosophical psychology that could meet to the requirements and experiences of modern days. In addition to the fact that they presented their interpretation of tradition in a highly attractive, concise and accessible form, this sense of purposefulness was without doubt one of the secrets of their success.

## § 2. MODERN PHILOSOPHY AND THE SCHOLASTIC PSYCHOLOGICAL TRADITION

The critical pressure on Peripatetic philosophy heightened in the seventeenth century, although not all sectors of Aristotle's philosophy were rejected<sup>10</sup>. Next to physics, a major target of criticism

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Durandi" was instaurated. With regard to the species debate, the most frequently quoted authors (apart from those mentioned above) were: Giles of Rome, Richard of Middleton, Henry of Ghent, Hervaeus Natalis, and Peter Aureol. The influence of Capreolus and the 16th-century commentators of Thomas was overwhelming.

<sup>7</sup> In 1565 the General of the Jesuit Order drew up a list of traditional philosophical conceptions, dividing them in acceptable and unacceptable ones. This list was not fully comprehensive, however; see Ch. Lohr, "Jesuit Aristotelianism and sixteenth-century metaphysics", in *Paradosis: Studies in Memory of Edwin A. Quain*, New York 1976, 203-220, on p. 216. For the specific type of Thomism developed by the Jesuits, see Giacon, *La seconda scolastica*, vol. II, Milano 1947, 25-42.

<sup>8</sup> Erasmus enjoyed considerable fame in Spain. There are only few references to Renaissance philosophy, most of them to Nifo, Buccaferrea, Zabarella, and Piccolomini. Ficino and Pico are rarely mentioned.

<sup>9</sup> Recall that the translation of Argyropoulos, who translated *eidos* with "species", conquered the Jesuit institutes and universities; cf. Cranz, "The Renaissance reading of the *De anima*", in *Platon et Aristote à la Renaissance*, Paris 1976, 359-376, on p. 364. Nonetheless, almost all Spanish schoolmen were strenuous defenders of the species.

<sup>10</sup> Indeed, Aristotelian logic, poetics, politics, and biology were generally accepted. On the reasons behind the breakdown of Aristotelian philosophy, see Schmitt, "Towards a reassessment of Renaissance Aristotelianism", 170-71; N.W. Gilbert, "Renaissance Aristotelianism and its fate: Some observations and problems", in *Naturalism and Historical Understanding*, ed. J. Anton, Buffalo 1967,

was the Peripatetic psychology of cognition, and in particular the doctrine of species. This is certainly true of authors such as Descartes, Malebranche and Leibniz, who resisted the naturalism of Aristotelian anthropology and therefore also rejected Peripatetic psychology, but it applies no less to authors such as Hobbes and Locke, who regarded sense experience as the main source of intellectual knowledge.

It has become common practice for historical studies on cognition to stress the fundamental divide between Peripatetic tradition and modern, non-Aristotelian cognitive psychology. The divide is mostly taken to be self-evident, with authors such as Hobbes, Descartes, Malebranche and Locke stating their psychological purposes in sharp opposition to the Aristotelian lore. Most modern philosophers rejected the doctrine of species<sup>11</sup>. At this point, however, a number of questions suggest themselves. Thus, (1) exactly which doctrine of species was repudiated? Also, (2) did modern philosophers take into account the difference between sensible and intelligible species, and how did this affect their criticisms? Finally, (3) how did these modern opponents solve the problem for which the Scholastics had framed the notion of intelligible species?

As a rule, the leading seventeenth-century authors were ignorant of the different contexts in which the doctrine of intelligible species was appropriated by Scholastic and Renaissance authors. From the cursory remarks of philosophers like Descartes, Malebranche and Leibniz, we may gather that their criticism was principally concerned with the sensible species. Descartes and Malebranche drew a caricature of this concept, characterizing the sensible species as material 'flying images' entering into the human soul<sup>12</sup>. It is very probable that they found the intelligible species

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42-52; see also E. Grant, "Aristotelianism and the longevity of the medieval world view", in *History of Science* 16(1978), 93-106.

<sup>11</sup> The early Hobbes endorsed a species doctrine in the *Short Tract*; see ch. XI, § 2.1. Gassendi would develop a kind of Epicurean species doctrine, see ch. XI, § 3.

<sup>12</sup> One of the motives for this ridiculization must surely be sought in the way later schoolmen described the species. See, for example, Domenicus Bañes, *Scholastica commentaria in primam partem angelici doctoris D. Thomae Aquinatis*, tomus secundus, Venetiis 1591, who, on col. 1453, defines the intelligible species as "imago impressa"; and Ph. Fabro, *Philosophia naturalis Io. Duns*

no less absurd. Although Hobbes actually mentioned the intelligible species, his criticism, too, was directed mainly against the sensible species; his argument presumed that the redundancy of the latter necessarily entails that of the former. By contrast, some of the later Cartesians, such as Louis de la Forge and Emanuel Maignan, were prepared to accept the *sensible* species, redefining it in terms of mechanistic physics as motion or external stimulus of the act of perception. To this they added, however, that the human mind is unable to 'spiritualise' these stimuli so as to produce something like *intelligible* species.

The purpose for which the concept of intelligible species was developed by the Scholastics, was to explain how an immaterial mind is able to acquire information about the corporeal world. Modern philosophers considered Aristotle's conception of the physical world to be alien to modern science; in its wake they also rejected the Peripatetic view of human knowledge of the material world, notably including the doctrine of species. As an alternative, most moderns developed a theory of ideas to explain the mind's grasp of extramental reality. Because of this common purpose, there are interesting points of comparison between ideas and intelligible species, more specifically with regard to their origin and the way in which they were supposed to represent material objects. Indeed, as we shall see, in the hands of many authors the theory of ideas was in many ways parallel to earlier or contemporary accounts of intelligible species. It would be absurd, however, to think that it follows from the recurrent analogy that the moderns systematically borrowed from their predecessors. My aim in seeking out the points of correspondence here is simply to improve our understanding of the philosophical climate from which modern cognitive psychology has sprung<sup>13</sup>.

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*Scoti*, Venetiis 1602, who, on p. 496b, considered the (sensible) species as "imago" or "idolum" of the object. The criticisms of Malebranche were undoubtedly influenced by Gassendi's Epicurean notion of species, too; cf. ch. XIII, § 1.1.2.

<sup>13</sup> For a general discussion of the contribution of Aristotelian philosophy to the development of modern philosophy, see Chr. Mercer, "The vitality and importance of early modern Aristotelianism", in *The Rise of Modern Philosophy*, ed. T. Sorell, Oxford 1993, 33-67.

The new mechanistic physics that was shared by the greater part of modern philosophers, and the dualism of mind and body endorsed by Descartes and his followers, contrasted sharply with the Aristotelian idea of a natural science that should be able to address physical and psychological phenomena alike. Yet, we should be wary of letting the conventional caricature of the species mislead us here. Modern authors who ridiculized the species, such as Descartes, Locke, Malebranche and Leibniz, cast more than a casual glance at the works of the schoolmen they repudiated. The intellectual horizon of seventeenth-century philosophers was much vaster than has been assumed until recently. In addition to the main representatives of medieval and later Scholasticism, also Renaissance philosophers such as Telesio, Bruno, Patrizi and Campanella were important for the genesis of modern philosophy.

In present-day studies of post-Aristotelian psychology and the theory of ideas, ample reference is made to the Peripatetic view of knowledge acquisition. The comparison between Peripatetic and modern theories often remains highly unsatisfactory, however, for a number of reasons. Thus, it frequently happens that the account of the traditional view as given by, say, Descartes or Malebranche, is simply taken at face value. Consequently, no distinction is made between sensible and intelligible species, and the 'blurred' species is taken to be a material entity that may enter into the human soul<sup>14</sup>. Quite often, the idea of Peripatetic cognitive psychology is tacitly narrowed down to just the position of Aristotle or Aquinas, of which in most cases only a hazy and simplicistic account is given<sup>15</sup>. Other scholars, with a more thorough knowledge of the

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<sup>14</sup> Cf. N. Jolley, *The Light of the Soul. Theories of Ideas in Leibniz, Malebranche, and Descartes*, Oxford 1990, 29.

<sup>15</sup> See J.W. Yolton, "Ideas and knowledge in seventeenth-century philosophy", in *Journal of the History of Ideas* 13(1975), 145-165, on pp. 146-148, and idem, *Perceptual Acquaintance from Descartes to Reid*, Oxford 1984, 6-8. Cf. also R.A. Watson, *The Breakdown of Cartesian Metaphysics*, Atlantic Highlands 1987, 25-27; idem, "Arnauld, Malebranche, and the ontology of ideas", in *Methodology and Science* 24(1991), 163-173, on pp. 165-67; St. Nadler, *Arnauld and the Cartesian Philosophy of Ideas*, Manchester 1989, 3f; idem, *Malebranche and Ideas*, New York-Oxford 1992, 109f. R.I. Aaron, *John Locke*, Oxford, 1937, 84, defines the intelligible species as representative object; Yolton, "Ideas", 145-48, confuses forms, intelligible species, and ideas; Nadler, *o.c.*, p. 3 identifies the intelligible species as the object known; G. Hatfield, "Descartes' physiology and its relation to his psychology", in *The Cambridge Companion to Descartes*, ed. J. Cottingham,

Aristotelian tradition, wisely limit themselves to comparing only small and well-defined groups of authors<sup>16</sup>. As a rule, Renaissance psychology in general, and the disputes on intelligible species in particular, are largely ignored<sup>17</sup>. In this second and last part of my study, I hope to be able to fill in at least some of these gaps.

### § 3. PREVIEW

I divide the representatives of later Scholasticism in two broad classes here, pre- and post-Cartesian. In chapter X, I discuss the psychology of the generation of authors that preceded Descartes, and that was ignorant of his ideas. Chapter XI is devoted to the cognitive psychology of the first modern philosophers who rejected Aristotelian psychology, namely, Descartes, Hobbes, and Gassendi. In chapter XII, I discuss the reception of Descartes' ideas by his first Dutch followers. I also examine there a number of later seventeenth-century Scholastic authors, who were active between the 1640's and the end of the seventeenth century. The final sections of that chapter deal with the elaboration of the species doctrine by later French Cartesians, and the account of species in seventeenth-century philosophical lexica. Chapter XIII is an attempt to reconstruct the Peripatetic background of the famous controversies on ideas later in the seventeenth century, between Malebranche and Arnauld, and between John Locke and his critics. The chapter concludes with a discussion of perception, ideas, and species in Leibniz, who was among the last of the moderns to emphasize *and* appreciate his own Scholastic upbringing, and traditional philosophy in general.

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Cambridge 1992, 335-370, identifies intelligible species and substantial forms (on p. 339).

<sup>16</sup> See, e.g., F.J. Cronin, *Objective Being in Descartes and in Suarez*, Roma 1966, repr. New York 1987.

<sup>17</sup> The general custom is to leap straight from medieval to 17th-century views on perception; see J.J. Macintosh, "Perception and imagination in Descartes, Boyle, and Hooke", in *Canadian Journal of Philosophy* 13(1983), 327-352; see also G.C. Hatfield and W. Epstein, "The sensory core and the medieval foundation of early modern perceptual theory", in *Isis* 70(1979), 363-384.

## CHAPTER TEN

### RISE AND HEYDAY OF LATER SCHOLASTIC PSYCHOLOGY

The psychological views of late Scholasticism drew their inspiration from a large variety of ancient, medieval and Renaissance sources. Discussions of the intelligible species during this period tended to be strongly syncretizing. At the time of the Second Scholasticism, the doctrine of species was no longer the controverted issue that it had been during Middle Ages and Renaissance. Although later schoolmen frequently polemized with predecessors and contemporary authors, there was a general consensus with regard to the need for intelligible species, and doctrinal differences concerned only matters of detail.

In the first section, I examine the positions of the first generation of Spanish schoolmen, including authors such as Toletus and Suarez, whose influence would affect the thought of later schoolmen as well as that of many modern, non-Aristotelian philosophers. The second section is a discussion of the first Scholastic manuals and early seventeenth-century commentaries on *De anima*. In the final section I examine the position of the last 'pre-Cartesian' Scholastics.

#### § 1. SCHOLASTIC PSYCHOLOGY FROM PALACIOS TO SUAREZ

##### 1.1. *Michael de Palacios*

The first commentary on *De anima* to be printed in Spain was written by a relatively unknown author, Michael de Palacios<sup>1</sup>. It already had the characteristic features that would be typical of the

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<sup>1</sup> Michael de Palacios, fl. in the 16th century; from Granada; studied at the University of Salamanca; between 1545-1550 professor of philosophy there; in 1549, doctor theologiae there; between 1550-1554 professor of theology.

way in which later and more famous Spanish schoolmen expounded Aristotelian psychology: frequent references to medieval Scholastics, a tendency toward syncretism and eclecticism, and the idea of an 'ancient opposition' against species.

Palacios started his question on whether there are intelligible species with raising a number of objections: (1) the soul cannot be seen as the 'subject' of cognitive contents, because then it would become "lapideus" when conceiving a stone; (2) according to Themistius one knows the "species suscepta"; hence, no instrumental species are required<sup>2</sup>; (3) Henry of Ghent (who was evidently seen as a reliable authority here) rejected the species. Against these objections Palacios placed the authority of Thomas and Augustine, to which he added the argument from the three states of the intellect (potential, actual, and habitual)<sup>3</sup>. He then turned to an opinion which he initially ascribed to Alfarabi, but which he also presumed to be that of Caietanus, namely, the view that the intelligible species can be defined as "ipsa notitia intellectus"<sup>4</sup>. According to Palacios, a similar view is held by certain "iuniores" who regard the species as "actio intelligendi"<sup>5</sup>. Having established that "nostrates philosophi" maintain a distinction between notion and species, Palacios proceeded to give his own view of the matter.

Against Alfarabi and Avicenna, Palacios argued that intelligible species are produced and preserved in the possible intellect<sup>6</sup>. Their

<sup>2</sup> For Themistius' role in the species controversy, see ch. I, § 2 and § 4.2.

<sup>3</sup> See *In tres libros Aristotelis de anima commentarij, una cum quaestionibus in locos obscuriores subtilissimis*, Salamanticae 1557, 257vb-258rb. As regards Augustine, Palacios referred to his argument in behalf of an intellectual memory in *Confessiones*, X.8.

<sup>4</sup> As we have seen in ch. I, § 3, Latin translators of Arab philosophers did not use "species", but "intentio" for *ma'na* or *ma'qul*. That the species can be identified with "notitia" was held by Henry of Ghent; see *Quodlibetum* IV, q. 21, 201va; *idem*, q. 7, 148vb-149ra: Augustine's concept of "notitia" should be interpreted as "species expressa". On f. 150ra-51ra, Henry distinguished between three meanings of species in Augustine; the third is "notitia in cognoscente".

<sup>5</sup> *In tres libros Aristotelis de anima*, 258va. The juniors in question were Agostino Nifo, *De intellectu*, V, c. 5, and Aureol, *In II Sent.*, d. 2, q. 4. See ch. VI, § 3.2, and ch. IV, § 2.3, respectively.

<sup>6</sup> Notice that, by (tacitly) subscribing to the intra-mental production of mental representations, Palacios managed to skirt a number of puzzles regarding mind and body, in connection with the exact nature of the cooperation between phantasms and agent intellect in the generation of species.



existence explains the three states of the intellect, it grounds the simultaneous intellection of more than one object<sup>7</sup>, and it enables us to understand the act of intellectual conceiving as mental *and* human<sup>8</sup>. The intelligible species cannot be identified with the intellect's act (so he argued against Giles, but also, surprisingly, against Duns Scotus<sup>9</sup>), for the species are abstracted, whereas notions are not. Thus, Palacios distinguished between species and notion, restoring to the latter (as an equivalent of *noema*) the meaning it originally had for Aristotle, namely, that of actual thought<sup>10</sup>. Polemizing with Aureol, Palacios stressed the fact that the intelligible species is the mind's first act, that is, the intelligible likeness of the cognitive object in a strict sense, not its effective representation. According to Palacios, this entails that the species may in a sense be seen as the mind's object<sup>11</sup>.

The emphasis on the distinction between species and effective intellectual cognition apparently led Palacios to view the intelligible species as a sort of immediate mental object. This impression is borne out by his analysis of the relation between intelligible species and intelligible object. In this context, he quoted Thomas for the definition of the intelligible species as the thing's quidditative essence insofar as it is intelligible<sup>12</sup>. At the same time, however, Palacios seems to have been aware of the fact that this move might implicitly fuel the traditional opposition against intelligible

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<sup>7</sup> This was not accepted by Thomas; however, also Goes (author of the Coimbra *De anima* commentary) would accept it.

<sup>8</sup> This last qualification was directed against Avicenna.

<sup>9</sup> He referred to Giles of Rome, *Quodl.* III, q. 12, and to Scotus, [*Ord.*], I, d. 3, q. 7. As we have seen in ch. III, § 2.3, Giles tended to assimilate species and act; however, in Duns Scotus the species was carefully distinguished from the cognitive act; cf. ch. IV, § 1.1.

<sup>10</sup> For discussion, see ch. I, § 1.3 and § 4.2.

<sup>11</sup> *In tres libros Aristotelis de anima*, 259rb-va: "Sunt ergo species intelligibiles ipsa obiecta, quae repraesentantur intellectui etsi ratione differant. Nam ut est in mente dicitur species: ut cognoscitur, per mentem obiectum est, quia quanquam sint species rei similitudines, etiam sunt ipsa res ut intelligibilis est, & universale esse habens, ut D. Thom. (...) At verò notio non est ipsa res repraesentata, sed repraesentatio ipsa. (...) scientia est scibile significat speciem intelligibilem esse ipsam rem, quae scitur quanquam modo simpliori, ut diximus."

<sup>12</sup> *In tres libros Aristotelis de anima*, 276vb; Palacios referred to *Quodlibetum* VIII, a. 4.

species<sup>13</sup>. Indeed, he emphasized that the known thing is not a similitude, and he endorsed Aquinas' threefold distinction between species, intelligible object and notion<sup>14</sup>. Still, the exact difference between the first two of these terms is difficult to grasp, since the first regards the sensible thing represented as intelligible.

That the distinction between the species and the mind's object has indeed been blurred here, is confirmed elsewhere<sup>15</sup>. Between the intelligible species and the intelligible object there is only a "rationis intervallum". In the case of knowledge of particular things this 'interval' is evident, but when the mind is conceiving universals it is mostly unaware of the distinction, although it applies there just the same.

In an attempt to be more clear about just how the known object may exist in the mind as species, Palacios used a fairly troublesome metaphor, comparing the phantasm to wood and the intellect to fire. The abstracted species may then be seen as "scintillae micantes à phantasmate"<sup>16</sup>. This type of metaphor suggests that the species are the intelligible aspects of sensory representations, which are transferred from the latter to the receptive intellect. This means that the species are destined to lose their instrumental function, however. It was probably this type of metaphor that

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<sup>13</sup> Many medieval opponents, such as Durandus and Ockham, argued that intelligible species would inevitably turn out to 'terminate' the intellectual act, and would thus hinder the mind's grasp of sensible essences.

<sup>14</sup> *In tres libros Aristotelis de anima*, 277ra. He refers to *Summa contra Gentiles*, I, c. 54, and to *Summa theologiae*, I, q. 79, a. 2. See also p. 277va, where the "res intellecta" is defined as "quae natura subsistit".

<sup>15</sup> *In tres libros Aristotelis de anima*, 277ra-b: "Abstractis porrò speciebus, id quod intelligit mens est ipsa rei similitudo, estque ipsa res quodammodo, ut species hominis est ipse homo, qui in re subsistit, sed sub altiori modo quam subsistat."

<sup>16</sup> *In tres libros Aristotelis de anima*, 277va. The metaphor of burning wood may also be found in Heymeric de Campo; see ch. V, § 2.3, and *Problemata*, 43r where Heymeric compared the relation between the (Augustinian) inferior and superior reason with that between smouldering wood and a flame. For a similar concept in Albert, Ulrich of Strasbourg († 1277), and Dietrich of Freiberg, see M. Hoenen, "Heymeric van de Velde († 1460) und die Geschichte des Albertismus: Auf der Suche nach den Quellen der albertistischen Intellektslehre des Tractatus Problematicus", in *L'empreinte de la pensée. Cultures et philosophies de l'Allemagne médiévale. Sources, développement, diffusion*, ed. A. de Libera, Bergamo 1992, 330.

prompted modern opponents such as Descartes and Hobbes to ridicule the doctrine of species<sup>17</sup>.

Palacios' commentary gives an interesting impression of the particular state in which Scholastic psychology found itself between the first commentators of Thomas and the great Spanish schoolmen. Although its official codification by the Council of Trent was yet to come, the authority of Thomas at that time was apparently already well-established. At the same time, however, Palacios' commentary shows that Thomistic conceptions did not hold absolute dominion over psychological discussions. Stressing the dependency of cognitive content on abstracted species, Palacios ultimately tended to assimilate the two. It is true that he stated on several occasions that he accepted a real distinction between the intelligible species and the intelligible object, but in reality this allegiance to Aquinas was not much more than window-dressing.

### 1.2. *Petrus Martinez*

The psychology of Petrus Martinez, as laid down in his commentary on *De anima*<sup>18</sup>, betrays the strong influence of Caietanus on the development of Spanish psychological theory<sup>19</sup>.

Discussing the type of "passio" that is characteristic of the possible intellect in the act of knowing, Martinez argued that the intellect's passion is merely accidental, that is, it regards the reception of cognitive contents<sup>20</sup>. He distinguished between the causal and the 'formal' aspects of intellectual conceiving. The reception of the intelligible species qualifies the conceiving as "causaliter pati", and it is viewed as a preliminary condition for the more narrowly de-

<sup>17</sup> See ch. XI, § 1-2.

<sup>18</sup> Petrus Martinez, fl. ca. 1552-1575; studied in Alcalá; magister artium and doctor theologiae there; professor of philosophy, and then of theology there.

<sup>19</sup> Through Caietanus many Olivean views would be assimilated. For the parallels between Caietanus and Olivi, see ch. III, § 3.4, and ch. VII, § 2.1.

<sup>20</sup> *In tres libros Aristotelis de Anima commentarij*, Segunti 1575, 314a-316a. Cf. 329b: the possible intellect should not be seen as a pure potentiality like first matter; it is potential "in genere & ordine rerum cognoscibilium & immaterialium".

fined intellectual act<sup>21</sup>. Indeed, 'formally' the act of cognition consists in the intimate union of mind and object:

(...) ipsa potentia intellectiva dicitur intelligere formaliter, non per speciem ut instrumentum, sed ut formam imbibitam & intellectui intime unitam. (...) quia intelligibile penetrat, ut sic intime receptum in intellectu imbibatur, ut anima facta ipsum cognoscibile operetur tendendo in ipsum tanquam in connaturale (...).<sup>22</sup>

When the mind has become a coherent whole with the cognitive object, it is able to reflect on this object. According to Martinez, the reception of the intelligible species endows the mind with the capacity (first act) to unfold its vitality (second act)<sup>23</sup>. Thus, intellectual conceiving consists in "causaliter pati" as well as in "formaliter agere". The task of the intelligible species is seen as one of specification: it moves the intellect toward an effective cognitive grasp of a determinate object<sup>24</sup>.

Analogous to the view of Caietanus is Martinez' analysis of the role of the sensory images and of the agent intellect in the production of knowledge. The light of the agent intellect uncovers the

<sup>21</sup> *In tres libros Aristotelis de Anima*, 317a. The background of this view of the intellect's "passio" is Caietanus' discussion of *Summa theologiae*, I, q. 79, a. 2; cf. *In Primam partem*, 355r-359v: the intellectual act involves a "causaliter pati", not "formaliter".

<sup>22</sup> *In tres libros Aristotelis de Anima*, 317a-b. For the terminology of the object as "imbibitum", see Petrus Iohannis Olivi, *Quaestiones in secundum librum Sententiarum*, vol. III, q. 72, p. 35: "Nam actus et aspectus cognitivus figuratur in obiecto et intentionaliter habet ipsum intra se imbibitur; propter quod actus cognitivus vocatur apprehensio et apprehensiva tentio obiecti." Cf. *In II Sent.*, q. 58, in vol. II, 415-16. The conception of the intellect as 'drinking' its object would be ascribed to Caietanus by Zabarella, and subsequently be severely criticized; cf. ch. IX, § 1.1.

<sup>23</sup> *In tres libros Aristotelis de Anima*, 319a-b: "(...) quia anima iam in actu primo facta per speciem se movet ad actum secundum, quia virtus est animalis & viva, quae movetur à principio intrinseco, & quasi à suscepto semine." The biological metaphor of the species as seed and the possible intellect as "foemina" frequently recurred in Spanish schoolmen. For the definition of the intelligible species as the mind's first act, see John Duns Scotus, *Ordinatio*, q. 1, 243: "Nec tamen intelligo ita istos actus esse ordinatos quod prior sit ratio receptiva respectu posterioris, sicut scilicet superficies est ratio recipiendi albedinem: tunc enim intellectus respectu nullius 'intelligibilis' recipere posset actum secundum (qui est intellectio), nisi prius haberet actum primum (ut speciem eiusdem obiecti); sed intelligo quod intellectus de se est ratio immediata recipiendo utrumque actum." Thomas defined the intellect's first and second act as "scientia" and "consideratio", respectively; cf. *Summa contra Gentiles*, I, c. 45, 385.

<sup>24</sup> *In tres libros Aristotelis de Anima*, 320a.

quidditative essence present in the phantasm<sup>25</sup>. The activity of the active mind is not that of purifying, but only of making visible what was occulted, showing what remained unseen by the 'moonlight' of phantasy<sup>26</sup>. Indeed, the light of the agent intellect is not formally received by the phantasms, but it mediates between the possible intellect and the sensory representations<sup>27</sup>. In addition, it illuminates the possible intellect before the latter receives the species<sup>28</sup>. At this point, however, it would seem that the need of any *mediating* intelligible species is obviated by the intelligible essence that is contained in the phantasm and that is uncovered by the agent intellect.

Like Caietanus, Martinez believed that he could solve this puzzle by distinguishing between an 'objectively' intelligible (species) and a 'formally' intelligible object<sup>29</sup>, such that the latter is a necessary condition of the former:

(...) necessitas ponendi huiusmodi intelligibile obiectivum est, quia quidditas prius debet ex parte obiecti praecedere, quàm species intelligibilis producat, sicut color visibilem speciem antecedit (...) ergo necesse est lumine intellectus agentis quidditas obiective in phantasmate apparere incipiat & praecedat, quae sit intelligibile in actu, id est, speciei intelligibilis productiva.<sup>30</sup>

Thus, the intelligible species is produced by the intelligible form unveiled in the sensory image. This artificial construction seems to seriously undermine the intrinsic coherence of the act of cognition. If the agent intellect is able to uncover the 'objective' intelligible in the phantasm, then, presumably, the possible intellect is able to grasp this object. Now, why should anyone want this intelligible to produce yet another formal intelligible that may then be received by the possible intellect? The first operation

<sup>25</sup> *In tres libros Aristotelis de Anima*, 364a. For Caietanus, see ch. VII, § 2.1.

<sup>26</sup> See *In tres libros Aristotelis de Anima*, 320b, for the metaphor of sun and moon standing for phantasy and agent intellect, respectively.

<sup>27</sup> This conception, derived from Caietanus, would be refuted in the *De anima* commentary of the Collegium Conimbricense.

<sup>28</sup> See *In tres libros Aristotelis de Anima*, 365a-366a; for the illumination of phantasms as well as of the possible intellect by the agent intellect, see already Albert (ch. II, § 2.1) and Giles (ch. III, § 2.3). The illumination of the possible intellect before the reception of the species was also defended by Lambertus de Monte (ch. V, § 2.6).

<sup>29</sup> *In tres libros Aristotelis de Anima*, 368a-69a.

<sup>30</sup> *In tres libros Aristotelis de Anima*, 369a.

seems perfectly sufficient to explain the mind's grasp of sensible essences. Arguably, the construction would be less troublesome if it were supposed that the uncovering of the essence is simultaneous with the production of the intelligible species. In that case, the latter could be seen as a mental representation of the former, and a trigger for the mind's act. It is not inconceivable that Martinez had something like this in mind, but it is not very probable either, considering the (chrono)logical priority assigned by him to the uncovering of the 'objective' intelligible that is then bound to generate the 'formal' intelligible.

Martinez seems to have been aware of this problem, for he attempted to explain the difference between the quidditative essence in the phantasm and in the intelligible species as that between the object that moves the intellect and the intrinsic formal principle of cognition<sup>31</sup>. What is effectively grasped is the essence "shining forth" from the sensory image<sup>32</sup>. Now, what other role could a 'formal' principle of intellection be supposed to play here, if not that of mnemonic content in acts of recollection? Indeed, elsewhere Martinez seems to have been looking for a solution along these lines<sup>33</sup>.

Martinez clearly believed that only the distinction between the 'objective' and the 'formal' intelligible might explain the causality of the phantasm without endangering the immanence of the mind's cognitive act<sup>34</sup>. In this vein, he pointed out the errors in Cai-

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<sup>31</sup> *In tres libros Aristotelis de Anima*, 395b.

<sup>32</sup> *In tres libros Aristotelis de Anima*, 397b: "(...) intellectio nostra est intuitiva respectu quidditatis materialis relucens in phantasmate"; 406b: the intellect captures in the phantasm "relucens quidditates"; and cf. 424a, regarding the presence of the "quidditas" in the phantasm: "(...) non ut inhaerens, sed relucens, quia non est abstractio secundum rem à phantasmate, sed tantum secundum relucens, quae est abstractio secundum considerationem." Also Richard of Middleton hypothesized a "refulgentia" originating from the phantasms as sufficient to actualize the intellect; cf. *In II Sententiarum*, dist. 24, a. 3, q. 4 ad 5, 313a: "(...) de potentia phantasmatis, de cuius essentia non est materia, educitur per actionem intellectus agentis quaedam refulgentia, qua mediante intellectus agens causat in intellectu possibili intellectionem universalis, quod in sequenti distinctione declarabitur."

<sup>33</sup> See *In tres libros Aristotelis de Anima*, 411a: "species ergo loco rerum sunt". See also p. 414a on the representational function of the intelligible species, and p. 420a-b regarding the use of species in the knowledge of things already known.

<sup>34</sup> *In tres libros Aristotelis de Anima*, 370a f.

etanus<sup>35</sup> and Ferrara with regard to the role of sensory representations in the production of knowledge. The phantasm does not become “virtuosior & habilior” by dint of its cooperation with the agent intellect, for then it would also have a value of its own, independent of the agent intellect, which would pave the way for a Durandian rejection of the mind’s active features<sup>36</sup>. Moreover, Martinez insisted on the fact that the intelligible species do not ‘flow from’ the agent intellect and/or the phantasm towards the possible intellect; rather, they are generated in the latter. Thus, apart from his fairly troublesome account of the preliminary stages of knowledge acquisition, Martinez managed to do justice to Aristotle’s conception of the mental act as both immanent and as representing an external object<sup>37</sup>.

### 1.3. *Francisco Toletus*

The tendency of Jesuit psychology to blend doctrines from Thomistic and Scotistic traditions with secular Aristotelian views has a fine example in the commentary on *De anima* by Francisco Toletus<sup>38</sup>. For example, Toletus argued the immateriality of the possible intellect by stressing that otherwise it would be unable to receive the “species universalium”, but at the same time he maintained that particular things are grasped directly “per propriam

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<sup>35</sup> The presence of Caietanus in this polemics is a bit surprising, considering that Martinez endorsed typically Caietanian views.

<sup>36</sup> *In tres libros Aristotelis de Anima*, 371a. See also p. 423a-b: the phantasm contains a universal similitude “denominatione extrinseca ab intellectus agentis illustratione”.

<sup>37</sup> *In tres libros Aristotelis de Anima*, 372a: the “rerum naturalium actiones” do not arise through emanation but “per educationem in patiente”.

<sup>38</sup> Franciscus Toletus, 1532 Cordova—1596 Rome; studied philosophy and theology with Domingo de Soto in Salamanca; doctor at 23 years, he occupied the chair of philosophy there; joined the Jesuits in 1558; Francesco Borgia, general of the SJ, sent him to the Collegio Romano to teach philosophy (1559-1563) and theology (1563-1569); held leading positions in the ecclesiastical hierarchy and became cardinal in 1593. His commentaries on Aristotle were printed many times and became widely known throughout Europe in the 16th and the 17th century. For discussion, see H.J. Müller, *Die Lehre vom verbum mentis in der spanischen Scholastik*, Münster 1968, pp. 29, 126f; C. Giacon, *La seconda scolastica*, vol. II: *Precedenze teoretiche ai problemi giuridiche*, Milano 1947, 51-55.

speciem"<sup>39</sup>. Also his views on the relation between the possible and the agent intellect testify to his eclecticism<sup>40</sup>.

Elsewhere in his commentary, Toletus clarified certain metaphysical aspects of knowledge acquisition without yet tackling there the issue of species. Analyzing the idea that the intellect is actual in "genere rei", but potential in "genere intelligibilium", Toletus observed that when a thing has a certain form, it cannot at the same time receive a similar one<sup>41</sup>. Therefore, the receptivity of an intellectual nature can only regard sensible essences<sup>42</sup>. As we have seen earlier in this study, the cognitive psychology of Thomas Aquinas contained an (apparently) ambiguous determination of the intellect's object, which was defined there as phantasm but also as "quidditas rei"<sup>43</sup>. Probably in a reflection on this problematic point in Thomas, Toletus specified the sense-dependency of intellectual knowledge by distinguishing between the "obiectum motivum" (the phantasm stirring the mind) and the "obiectum terminativum" (the sensible nature contained in the phantasm and adequately represented by the species)<sup>44</sup>. However, the phantasm stirring the human mind is not sufficient for the generation of knowledge; knowledge springs from the dynamic interplay between the intellect and the sensory representations.

The idea that intelligible species (which were initially seen as unproblematic) are needed for the production of knowledge was

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<sup>39</sup> Franciscus Toletus, *Commentaria una cum quaestionibus in tres libros Aristotelis De anima*, Venetiis 1605 (first edition Venetiis 1574), 138rab and 142rb-143rb. In this same period, the existence of intelligible species of individuals was still rejected by Petrus de Fonseca, *In Libros Metaphysicorum Aristotelis Stagyrtae*, tomus I, Lugduni 1601, 141-151.

<sup>40</sup> See below.

<sup>41</sup> *Commentaria in tres libros Aristotelis De anima*, 135rab.

<sup>42</sup> It was just this thesis that had led Achillini to the refutation of a *mediating* species; cf. ch. VI, § 2.1.

<sup>43</sup> See ch. II, § 3.5. In Thomas' cognitive psychology the agent intellect was supposed to process the information conveyed by sense perception. Therefore, its object was sometimes defined as phantasm, but at other times also as "ens intelligibile" or as "quidditas rei". The causality of the agent intellect is directed toward the phantasm whenever it effectuates intelligible species. In this sense, the phantasm is the object of the agent intellect, but what is known is the "quidditas rei", that is, the intelligible essence of a sensible thing.

<sup>44</sup> *Commentaria in tres libros Aristotelis De anima*, 135rb. As we shall see, also the intelligible species can be characterized as "obiectum motivum" for its role in the generation of mental acts; cf. p. 170rb, quoted below.



critically discussed by Toletus only at the end of his commentary on *De anima*. After a brief survey of the most general objections against intelligible species<sup>45</sup>, he proceeded with listing a number of different positions in the dispute. Firstly, he mentioned those who rejected the intelligible species *tout court*<sup>46</sup>. A second position is that of Avicenna, who believed that species are necessary, but who did not accept their being preserved<sup>47</sup>. Thirdly, there are some authors who accept the preservation of species, but who restrict the sense-dependence of intellectual cognition to the first act of intellection: once an object has been grasped, no “*conversio ad phantasma*” is needed for subsequent intellections of the same object<sup>48</sup>. Finally, Toletus mentioned a “*communis sententia*” which he attributed to Thomas and Giles of Rome: although intelligible species are preserved, phantasms are also needed for subsequent acts.

Toletus’ own view of the matter is presented in terms of three conclusions. (1) The need for intelligible species can be derived from the authority of Aristotle, from the parallelism between sense and intellect, and from an “*optimum argumentum*”: the intellect is a “*potentia indeterminata*” and therefore it needs species to know determinate objects<sup>49</sup>. (2) For the existence of an intellectual memory, the authority of Aristotle and that of Augustine are invoked<sup>50</sup>; only the preservation of intelligible species may explain the difference between learned and ignorant people<sup>51</sup>. (3) The em-

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<sup>45</sup> *Commentaria in tres libros Aristotelis De anima*, III, q. 21, 168va: (1) they cannot be produced by the intellect, nor by the phantasms; (2) they cannot be preserved, since the intellect does not have any organs; (3) after a first knowledge, the phantasms would become superfluous.

<sup>46</sup> *Commentaria in tres libros Aristotelis De anima*, 168vb: Theophrastus, Themistius, Avempace, Baconthorpe, and Henry of Ghent. They think that “(...) *ad praesentiam enim Intellectus agentis in phantasmatis [the mind] cognoscit res repraesentata ut in speculo.*”

<sup>47</sup> *Commentaria in tres libros Aristotelis De anima*, 168vb; Toletus tacitly identified the Avicennian intention with species. For background information, see ch. I, § 3.2.

<sup>48</sup> *Commentaria in tres libros Aristotelis De anima*, 168vb. It is not difficult to discover Albert and his followers behind this opinion; see ch. II, § 2.1, and ch. V, § 2. See also the positions of Lefèvre d’Étaples and Charles de Bovelles (ch. VI, § 1.4).

<sup>49</sup> *Commentaria in tres libros Aristotelis De anima*, 168vb-169a.

<sup>50</sup> Like Palacios, he cites *Confessiones*, X.8; see *supra* subsection 1.

<sup>51</sup> *Commentaria in tres libros Aristotelis De anima*, 169rab.

bodied soul can only gain knowledge in cooperation with the imagination. Intellectual knowledge depends on phantasms, also in the recollection of previous experiences<sup>52</sup>. The possibility of knowledge without imagination is not excluded, but it is said to depend on divine intervention<sup>53</sup>.

In a next question Toletus described the function of the species in the production of the intellection:

(...) species autem est dispositio modificans, & excitans intellectum ad operandum, & ut motivum obiectum concurrens obiectivè ac terminativè immediatè.<sup>54</sup>

The intelligible species is a disposition that modifies the mind and incites it to its operation; that is to say, it moves the mind toward knowing the represented cognitive content.

Toletus' remarks on the need for intelligible species were hardly exciting. More interesting ideas can be found in his discussion of the role of the intellect and the phantasms in the generation of knowledge.

In the thirteenth question on the third book of *De anima*, Toletus discussed the nature and function of the agent intellect, starting off with a broad survey of opinions derived from Durandus, Theophrastus, Themistius, Jandun, Thomas and followers, and many others<sup>55</sup>. Then, in nine conclusions, he argued for the necessity of an unknowing and illuminating intellect that produces the intelligible species along with the illuminated phantasms<sup>56</sup>. There are some problems with these conclusions, however, for Toletus did not unconditionally accept all the claims made in them. This applies in particular to the claim that the intellect produces light *in* the sensory representations, and to the claim that a *distinct* agent intellect is needed.

I take the second point first. In his first conclusion Toletus pressed the need of an agent intellect, but in his last conclusion he

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<sup>52</sup> *Commentaria in tres libros Aristotelis De anima*, 169rb-va; he referred to *Summa contra Gentiles*, II, c. 73, and *Summa theologiae*, I, q. 84, a. 7, and did not accept Scotus' proposal to hold the original sin responsible for the mind's dependence on species.

<sup>53</sup> *Commentaria in tres libros Aristotelis De anima*, 169vb.

<sup>54</sup> *Commentaria in tres libros Aristotelis De anima*, 170rb.

<sup>55</sup> See *Commentaria in tres libros Aristotelis De anima*, 144va-145rb.

<sup>56</sup> *Commentaria in tres libros Aristotelis De anima*, 145rb-146va.

qualified the position of Durandus as being probable; these claims seem hard to reconcile. The contradiction is only apparent, however: Toletus made a case for the active features of the human mind, but he made no sharp distinction between the mind's activity and its grasping cognitive objects. Thus, when he endorsed the concept of an agent intellect, this was more out of philosophical conformism than because of any specific arguments in behalf of the agent intellect<sup>57</sup>.

Also puzzling was Toletus' stand on the illumination of phantasms. After his initial remarks on illumination in the fourth conclusion ("Intellectus producit lumen ipsum in ipsis phantasmatis receptum, ut in subiecto"), Toletus subsequently seemed to be taking the exactly opposite view<sup>58</sup>. Indeed, not only did he severely undermine the idea of an 'internal' illumination of sensory representations, but he even explicitly contradicted it. In the fifth and sixth conclusion he theorized a merely 'external' illumination of phantasms, together with an 'internal' illumination of intelligible species<sup>59</sup>. The upshot of these conclusions is a more detailed account of the difference between knowledge of particulars "per propriam speciem" and knowledge of universals based on these species. From the external illumination of the phantasms arises the species of a particular thing, while from the internal illumination of this intelligible species arises the universal object of intellection<sup>60</sup>. Notice that Toletus based the grasp of universals on the second illumination of the agent intellect; Suarez, as we shall see,

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<sup>57</sup> See *Commentaria in tres libros Aristotelis De anima*, 146va. Cf. E. Kessler, "The intellective soul", 512.

<sup>58</sup> *Commentaria in tres libros Aristotelis De anima*, 146ra: (1) the intellect's light is neither immaterial nor material; (2) qualities cannot receive accidents.

<sup>59</sup> See *Commentaria in tres libros Aristotelis De anima*, 146vb.

<sup>60</sup> *Commentaria in tres libros Aristotelis De anima*, 146rb-va. See also Kessler, "The intellective soul", 512. The need for an illumination of intelligible species was differently argued for by Lambertus de Monte, namely, in terms of their preservation; see *Expositio De anima*, lxiii<sup>v</sup>b: "(...) ideo intellectus agens illuminans phantasmata facit resultare unam speciem immaterialem ad intellectum possibilem et hoc est abstrahere. (...) Illuminare species sic abstractas et ad intellectum possibilem receptas. quia nisi intellectus agens continue illuminaret species existentes in intellectu possibili tunc redirent ad materialitatem." For discussion see ch. V, § 2.6. On p. 169rb, Toletus distinguished the intelligible species from sensible species by qualifying them as "accidentia spiritualia", which in virtue of their merely psychological existence should be seen as less subjected to change than the sensible ones, which exist in the body and the soul.

would refer the intellectual abstraction of universals to the possible intellect<sup>61</sup>.

Basing himself on the traditions of the Middle Ages and the Renaissance, Toletus worked out a new synthesis in Aristotelian cognitive psychology. He made contributions to the terminological clarification of the role of the phantasm and of the species in mental acts. He endorsed the view that intellectual knowledge is sense-dependent. Yet, he apparently remained uncertain as to exactly how the mind may process the representations conveyed by the senses: he remained vague about the precise status of the active features of the mind, and he gave contradictory accounts of the illumination of the phantasms.

#### 1.4. Domingo Bañes

After its first beginnings in the fifteenth century, the syncretistic tendency in later Scholastic psychology would be its towering aspect throughout the sixteenth and seventeenth centuries. This same tendency also marked the commentary on the *Summa theologiae* by Domingo Bañes<sup>62</sup>.

Discussing *Summa theologiae*, I, q. 79, a. 3, Bañes endorsed the Aegidian interpretation of the cooperation between agent intellect and phantasm in the production of the intelligible species<sup>63</sup>. It is by virtue of this cooperation that sensory representations are 'raised' to a superior level of being; by the same token, the phantasy may be seen as the principal and proximate cause of the generation of mental representations<sup>64</sup>. Mental representations betoken the intimate union of mind and cognitive object<sup>65</sup>. Intelligible species actively contribute to acts of knowledge, though not, as some think,

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<sup>61</sup> See subsection 6; this position was already endorsed by Zabarella (ch. IX, § 1.1).

<sup>62</sup> Dominicus Bañes, 1528—1604; held the chair of theology in Salamanca between 1580-1604.

<sup>63</sup> *Scholastica commentaria in primam partem angelici doctoris D. Thomae Aquinatis*, a q. LXV ad CXIX, & ultimam, tomus secundus, Venetiis 1591, col. 1110.

<sup>64</sup> *Scholastica commentaria in primam partem*, 1103 and 1453.

<sup>65</sup> *Scholastica commentaria in primam partem*, 1444: "(...) ut per eam (...) fiat res intellecta in esse intelligibili."

in a more prominent way (“principalius”) than the intellect itself<sup>66</sup>. The main function of the species is to purvey full actuality to the intellect<sup>67</sup>.

Bañes insisted on precisely delineating the role of the species as one of determination, thus polemizing implicitly with traditional positions. Although he declined the species as a “dispositio”<sup>68</sup>, he neither accepted it as partial cause of the intellection, as this would entail that species and intellect are equivalent causes. The intellect has the power to produce its own act, whereas the species, as “imago impressa”<sup>69</sup>, contributes to its objective reference:

Intellectus ex natura sua habet virtutem activam ad eliciendam intellectionem, quamvis haec virtus perficiatur & determinetur per speciem intelligibilem ad particularem obiectum.<sup>70</sup>

Bañes’ discussion of the intelligible species did not break any new ground. It harmonized central tenets of Thomistic psychology with the then prevailing tendency to view the intellect as the privileged cause of its own immanent act.

Other Thomas commentators of that time, such as Gabriel Vazquez<sup>71</sup> and Luis Molina<sup>72</sup>, were interested chiefly in theological problems; as a rule, they simply endorsed the notion of species without any detailed examination of the nature and function of mental representation<sup>73</sup>.

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<sup>66</sup> *Scholastica commentaria in primam partem*, 1446-48.

<sup>67</sup> *Scholastica commentaria in primam partem*, 1450: “Propter haec argumenta & alia quae fecimus locis citatis, negari non potest, quin species intelligibilis accidentaria concurret active ad intellectionem, cum ipsa det intellectui completam actualitatem, ut habeat operationem in ordine ad obiectum, cuius est species.”

<sup>68</sup> Among others, Jandun (ch. IV, § 4.3), Bacilieri (ch. VI, § 2.3) and Toletus (subsection 3) qualified the species as disposition.

<sup>69</sup> *Scholastica commentaria in primam partem*, 1453.

<sup>70</sup> *Scholastica commentaria in primam partem*, 1451.

<sup>71</sup> See Gabriel Vazquez, *Commentaria ac disputationes in primam partem Sancti Thomae*, in *Opera*, 9 vols., Lugduni 1631, vol. I-II.

<sup>72</sup> Ludovicus Molina, *Commentaria in Primam D. Thomae partem*, 2 vols., Lugduni 1622 (first edition: Venice 1594).

<sup>73</sup> Vazquez examined the first 64 questions of the “Pars prima”. Molina’s comment regarded only the first 26 questions; in *Commentaria*, q. XII, a. 2, disp. 1, 98b-103a, Molina presented a rather conventional argument for the need of impressed and expressed species. The human intellect is “indifferens”, and therefore a proportionate representation is needed, which links it to a determinate object. Then, the intellect may unfold its vitality in the second act (expressed species).

### 1.5. *The College of Coimbra*

The *De anima* commentary of the Portuguese philosopher Emanuel de Goes formed part of the integrated series of Aristotle commentaries composed by the Jesuit college of Coimbra. As Kessler observes, it was animated by a spirit of reconciliation. Although Goes had at his disposal the complete tradition of Greek, Arab and Latin commentaries, he rarely chose to polemize. Instead, he clinically analyzed divergent positions and tried to assess the relative strength of the arguments in their behalf. Moreover, in many cases Goes declined to resort to a dogmatic decision; on numerous controverted issues between Thomists and Scotists of his days, he declared both positions to be equally defensible, if not equally probable<sup>74</sup>.

Like most of his colleagues at that time, Goes did not seriously question the need for intelligible species. His psychological interests lay chiefly in the discussion of specific problems connected with the species doctrine, such as the production of species, the function of the agent intellect, and the modalities of knowledge of substantial essences.

Goes duly considered a number of arguments, most of them well-known, against the need for intelligible species<sup>75</sup>. He accepted the existence and preservation of species on the authority of Augustine and others. He held that the phantasm is connected strictly to corporeal reality, and that it is therefore unable to actualize the possible intellect. The intelligible species, however, as "imago rei intelligendae"<sup>76</sup>, is able to join forces with the intellect in generating the latter's act, remaining in it as accident<sup>77</sup>.

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<sup>74</sup> E. Kessler, "The intellective soul", 512-13. For discussion, see also Müller, *Die Lehre von verbum mentis*, 30 and 126f.

<sup>75</sup> *Commentaria in tres libros de anima*, Venetiis 1616, 293a-94a: (1) the phantasm presents the object immediately to the intellect; (2) volitive acts do not require any species (see already John Duns Scotus, *Ordinatio*, I, dist. 3, q. 1, 204); (3) one would know without interruption; (4) the species should be known; (5) of many things (God, separate substances) no species exist; (6) the angels know without species.

<sup>76</sup> Notice that the intelligible species was elsewhere explicitly distinguished from "intellectio"; see *Commentaria in tres libros de anima*, 337a-338b.

<sup>77</sup> *Commentaria in tres libros de anima*, 295a.

With regard to the origin of intelligible species, Goes observed that the generation of species is conditioned by a preliminary illumination of the phantasms by the agent intellect. Having established the need for an agent intellect<sup>78</sup>, Goes went on to specify its three operations, namely, the illumination of the phantasms, the generation of the actual intelligible object, and the production of the intelligible species in the possible intellect<sup>79</sup>. With regard to the first operation, and referring to Durandus and Capreolus, he argued that the illumination cannot consist in the impression of a quality. Also Caietanus' doctrine of an 'objective' illumination, mediating between phantasm and receptive intellect, was rejected by Goes<sup>80</sup>. He qualified as "probabilius" the opinions of Ferrara and Capreolus regarding a possible "coniunctio" of phantasy and intellect; but they, too, were rejected as less than convincing<sup>81</sup>. Then Goes presented a recent position which he also endorsed for himself: the illumination is neither 'objective' nor 'radical', but 'effective',

(...) non quasi intellectus agens aliquid luminis phantasmatis imprimat; sed quia tanquam externa lux radij sui consortio active elevat phantasmata ad producendam speciem intelligibilem; in qua communis natura repraesentatur exuta differentiis individualibus, manetque solo intellectu perceptibilis.<sup>82</sup>

With regard to the other two operations of the agent intellect, Goes emphasized the fact that they are realized simultaneously with the first. He thus seemed well aware of the ominous fragmentation hovering over the generation of the intellective act<sup>83</sup>. More important for him, however, was the question of how the species

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<sup>78</sup> *Commentaria in tres libros de anima*, 284a-88b: finally, Goes expressed his preference for a real distinction between agent and possible intellect.

<sup>79</sup> *Commentaria in tres libros de anima*, 289b.

<sup>80</sup> *Commentaria in tres libros de anima*, 289b-290a.

<sup>81</sup> *Commentaria in tres libros de anima*, 290b.

<sup>82</sup> *Commentaria in tres libros de anima*, 291a. Most probably, this recent philosopher was Suarez, since this view is not found in other contemporary authors; cf. below subsection 6.

<sup>83</sup> *Commentaria in tres libros de anima*, 292b; see, however, also p. 291b: "Ex quo facile apparet, rem prius saltem natura esse intelligibilem actu, quam intelligatur ab intellectu, cum intellectio praerequirat, supponatque speciem intelligibilem, a quo oritur; & res eiusmodi specie iam sit intelligibilis actu, ut explicatum est."

is related to different types of objects and to different types of knowledge.

Goes' discussion of knowledge of singulars demonstrates his relaxed attitude with regard to the differences between Thomists and Scotists. Thomas, Capreolus, Caietanus and others rejected the idea of intelligible species representing singular natures<sup>84</sup>; Scotus, Gregory, Richard and others, by contrast, argued for the opposite position<sup>85</sup>. Goes thought that both positions are probable, although he expressed a preference for the former as being "magis Peripatetica"<sup>86</sup>.

Goes then turned to the question of whether the intelligible species are produced by the agent intellect. Here he discussed in more detail the type of knowledge to which the species may give rise<sup>87</sup>. He started with rejecting the Presocratic, Hellenistic, and Platonic views on the acquisition of intellectual knowledge<sup>88</sup>. The agent intellect produces species of all the things of which there are phantasms, as is confirmed by the authority of Thomas and Augustine. Goes then entered into a debate that had been going on since the late thirteenth century, namely, that on the knowledge of substantial reality. He rejected the positions of Scotus, Richard and

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<sup>84</sup> In *Commentaria in tres libros de anima*, 297a-298a, Goes summarized their arguments as follows: (1) the ontological (immaterial) and hierarchical (between senses and angels) position of the intellect; (2) the principle of parsimony: particular things may be known with species of universals; (3) this type of species is not Aristotelian.

<sup>85</sup> *Commentaria in tres libros de anima*, 298a-99b: the intellectual soul forms singular concepts and remembers singular facts, also after death.

<sup>86</sup> *Commentaria in tres libros de anima*, 300a. See also p. 302a-b: "Licet enim species intelligibilis nullum singulare explicite repraesentet; determinatur tamen à phantasmate, atque ita conceptus rei censetur proles eius obiecti, cuius ipsum phantasma est." On p. 308a, Goes rejected the "species intuitivae", because there are no species for singular things. Cf. also pp. 339b-342a, for a discussion of concepts regarding singulars. Other authors, by contrast, would endorse the existence of intuitive species; cf., for example, Hurtado de Mendoza (§ 2.2.4), Joannes de Lugo, and Baltasar Tellez (§ 3.4).

<sup>87</sup> Elsewhere, he returned to the issue to be more specific about the sensitive origin of the intelligible species. See *Commentaria in tres libros de anima*, 310-14, discussing the hierarchy of the inner senses and the precise causality to be attributed to the phantasm in the production of the intelligible species. On the latter issue, Goes sought to blend Thomistic and Scotistic positions by taking the phantasm to be both an instrumental and a partial cause.

<sup>88</sup> See *Commentaria in tres libros de anima*, 303a-304a, on Democritus, the Stoics, Plato, and Avicenna.



Hervaeus, who believed that the intellect is unable to produce “species proprias” of substantial essences<sup>89</sup>. Javelli and Soncinas claimed that the agent intellect produced a species of accidents as well as of substance on the basis of the same phantasm<sup>90</sup>, while Thomas, Averroes, Jandun, Ferrara, Apollinare (Offredi), and Caietanus thought that the “cogitativa” (assimilated by Goes to the phantasy) expresses a “*proprium idolum singulare substantiae*”. Goes suggested that it is reasonable to believe that our knowledge of substances needs no unveiling “*ex involucri*”<sup>91</sup>. His own opinion, however, was formulated in more sophisticated terms:

Non credimus tamen, cogitativam, ut primum recipit speciem accidentis, confestim elicere expressam imaginem latentis in eo substantiae; sed primo aggressu apprehendere tale accidens: deinde ex illius praenotione in substantiae notitiam penetrare.<sup>92</sup>

Notice that Goes introduced here the concept of “*praenotio*”, a term coined by Cicero for the Epicurean *prolepsis*<sup>93</sup>, which in the sixteenth century was used by Simone Porzio in a similar context<sup>94</sup>. The knowledge of substance is not ‘hidden’ in the phantasm, which “*directe et per se*” represents only accidents; it is made available only at a mental level by virtue of the intelligible species produced by the agent intellect. The agent intellect is also responsible for the generation of species of objects falling under other Aristotelian categories, such as quantity, relation, and so on<sup>95</sup>. This should not be taken to mean that the agent intellect has the monopoly in producing human knowledge; Goes was attempting here to delimit its import from that of the possible intellect.

The agent intellect produces representations in accordance with the information offered by the inner senses; the possible intellect

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<sup>89</sup> *Commentaria in tres libros de anima*, 304b.

<sup>90</sup> For Soncinas’ view of this problem, see Paulus Soncinas, *Quaestiones meta-physicales acutissimae*, Venetiis 1576, liber VII, q. 13, 143b-144b.

<sup>91</sup> *Commentaria in tres libros de anima*, 304b-305; the background of a similar position is Roger Bacon’s theory of intentions; see ch. II, § 2.3.

<sup>92</sup> *Commentaria in tres libros de anima*, 305a; cf. 302a on the modalities of the knowledge of the singular. For the distinction between a “*phantasma expressum*” and “*impressum*”, see 311b. On p. 350a, the phantasm is defined as “*idolum spirituale*”.

<sup>93</sup> See ch. I, § 1.4.1.

<sup>94</sup> See ch. VII, § 4.2; see also Fracastoro’s “*subnotio*” (ch. VI, § 1.5).

<sup>95</sup> *Commentaria in tres libros de anima*, 305b-306b.

in its turn is seen as capable of producing knowledge at a higher level of abstraction, on the basis of these received species<sup>96</sup>. The agent intellect, bound by sensory representations, only generates species of a specific nature<sup>97</sup>. The possible intellect, by contrast, may arrive at universal knowledge. Goes sought to justify this distinction in terms of a rather peculiar principle, namely, that every natural cause produces primarily its most noble effect:

Nam quòd species primò genita ab intellectu agente, si nihil impediatur, non sit species generis; tum alijs argumentis concluditur, tum eo potissimum, quod omnis causa naturalis, si nihil desit, vel obsit, edit primò nobilissimum effectum, quem potest; nobilior autem effectus est imago repraesentans hominem, quàm animal.<sup>98</sup>

This means that general concepts cannot be extracted from the phantasms. On the basis of the phantasm the agent intellect produces an intelligible species, which, as a singular entity, represents the essence of a particular material thing. This essence is universal, however, because it is present in all other members of the same classificatory species, too. As such it makes possible the formation of universal concepts by the possible intellect<sup>99</sup>.

The Coimbra College commentary on *De anima* was written for distinctly pedagogical purposes, namely, to inform theology students about the central tenets and historical development of Peripatetic psychology. Goes demonstrated a penchant for reconciling the divergent doctrines of authoritative Scholastics. His psychological views were never presented in dogmatic terms; he frequently qualified his own conclusions as merely "probabilior". Emblematic for his analysis of Peripatetic cognitive psychology is his view on the knowledge of singulars and universals. He distinguished between prenotions, species abstracted by the agent intellect, and species generated by the possible intellect, making a convincing case for the gradual grasping of universals.

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<sup>96</sup> This seems to relativize Goes' earlier reservations regarding the species of particular things; cf. *Commentaria in tres libros de anima*, 300a; see also p. 302a-b (quoted above).

<sup>97</sup> For species of individuals, see already the positions of Thomas Wilton (ch. IV, § 4.1), Gregory of Rimini (ch. IV, § 3.4), Paul of Venice (ch. V, § 3.1), Lefèvre d'Étaples (ch. VI, § 1.4), Nifo (ch. VI, § 3.3), and Zabarella (ch. IX, § 1.1).

<sup>98</sup> *Commentaria in tres libros de anima*, 307b.

<sup>99</sup> Also earlier authors attributed the abstraction to the possible intellect; cf. Melancthon (ch. VII, § 3.1.2) and Zabarella (ch. IX, § 1.1).

### 1.6 *Francisco Suarez*

The importance of Francisco Suarez<sup>100</sup> for the history of Scholastic and non-Scholastic philosophy alike can hardly be overestimated. His new synthesis of traditional positions and of the views of sixteenth-century authors such as Caietanus, Toletus and the Coimbra group, would in the long run overshadow the authority of the medieval masters. He would have a strong influence on key figures in the philosophy of Protestant Orthodoxy in Germany and in the Republic of the Seven United Provinces<sup>101</sup>. His *De anima*, which was an autonomous and systematic treatise rather than a comment on the Aristotelian text, was the fruit of a lecture course on the soul delivered between 1571-74 at the University of Segovia. Toward the end of his life Suarez started to rewrite the work, but he finished only the first twelve chapters of book I. After Suarez's death Alvarez reorganized and published the treatise<sup>102</sup>.

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<sup>100</sup> Franciscus Suarez, 1548 Granada—1617 Lisbon; 1562 started to study law, Salamanca; 1564 entered the order of Jesuits; 1564-70 studied theology and philosophy, Salamanca; taught philosophy and theology at Segovia, Valladolid, Avila, Collegio Romano (Rome), Alcalá, Salamanca, Évora, and Coimbra; 1616 retired to Lisbon to prepare a new edition of his philosophical works.

<sup>101</sup> See, for example, K. Eschweiler, "Die Philosophie der spanischen Spätscholastik auf den deutschen Universitäten des siebzehnten Jahrhunderts", in *Spanische Forschungen des Görresgesellschaft* 1(1928), 251-325, on pp. 302 and 311; C. Giacon, *La seconda scolastica*, vol. I: *I grandi commentatori di San Tommaso*, Milano 1944, 7, for Suarez's influence on Descartes, Spinoza, Leibniz, and Berkeley; J. Ferrater Mora, "Suarez and modern philosophy", *Journal of the History of Ideas* 14(1953), 528-547; J.P. Donnelly, "Calvinist Thomism", in *Viator* 7(1976), 441-55, on p. 452.

<sup>102</sup> This explains the references to works published after his death and the frequent and profound differences between this edition and the recently published critical edition. I have used Franciscus Suarez, *De anima*, in *Opera omnia*, ed. nova D.M. André, tomus III, Parisiis 1856, which offers the text of Alvarez, and the critical edition by S. Castellote, 3 vols., Madrid 1978-1991. For a discussion of the chronology of Suarez *De anima*, see H.J. Müller, *Die Lehre von verbum mentis*, 31-32; E. Kessler, "The intellective soul", 514. For a general discussion of Suarez and the historical significance of his *De anima*, see J. Ludwig, *Das akausale Zusammenwirken (sympathia) der Seelenvermögen in der Erkenntnislehre des Suarez*, München 1929, 69-87; C. Giacon, *La seconda scolastica*, vol. II, 169f; J. de Vries, "Die Erkenntnislehre des Franz Suarez und der Nominalismus", in *Scholastik* 20-24(1949), 321-344; S. Castellote, *Die Anthropologie des Suarez*, München-Freiburg 1962.

Suarez detached himself from Thomistic cognitive psychology on several fundamental points. He relativized the distinction between agent and possible intellect<sup>103</sup>, assigning to the latter the principal role in the cognitive process, and regarding the former as a mere dispositional power<sup>104</sup>. Furthermore, like Toletus he explored the possibility of an immediate cognitive grasp of singular entities. Intellectual abstraction concerns only the materiality of a particular thing, not its concrete existence<sup>105</sup>. From the fact that the intellect's first object is a sensible individual, grasped by means of an intelligible species<sup>106</sup>, it does not follow, however, that the (inner) senses and their representations have any direct influence on the production of intellectual knowledge. They merely provide the occasion for the mind to generate mental representations and cognitive acts. Thus, Suarez's psychology borrowed not only from the nominalist tradition, but, as we shall see, it also drew on ideas from straightforward opponents of Thomist psychology, such as Peter Olivi, and probably also from Neoplatonic Peripatetics.

In the following paragraphs I examine, in order of appearance, the arguments in behalf of intelligible species, the place of species in our cognitive economy, and their origin and effective production. I shall also address the relationship between mind and sensory representations, and the conception of knowledge as (the effect of) an immanent act.

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<sup>103</sup> See already the speculation of early 13th-century authors, discussed in ch. II, § 1; cf. also John Peckam (ch. III, § 3.1).

<sup>104</sup> *De anima*, ed. André, IV, c. 8. However, already Thomas regarded the possible intellect as the only *knowing* intellect.

<sup>105</sup> *De anima*, IV, c. 3-4. Cf. *Disputationes Metaphysicae*, VI, c. 6, n° 7. See J. Ludwig, *Das akausale Zusammenwirken (sympathia) der Seelenvermögen in der Erkenntnislehre des Suarez*, 115 and 119; B. Jansen, "Die scholastische Psychologie vom 16. bis 18. Jahrhundert", in *Scholastik* 26(1951), 342-363, on pp. 349-351; W. Hoeres, "Bewusstsein und Erkenntnisbild bei Suarez", in *Scholastik* 36(1961), 192-216, pp. 192-93. Also Thomas endorsed this view, but he did not draw the conclusion that for this reason sensible reality as singular was the mind's first cognitive object; see ch. II, § 3.5.

<sup>106</sup> This conception of primary cognition of singulars through species was also postulated by Toletus and by several medieval and Renaissance authors, such as Thomas Wilton, Gregory of Rimini, Paul of Venice, Nifo, and Zabarella.

## 1.6.1. Species and the mental act

In the first chapter of the third book of his *De anima*, Suarez described the act of knowledge as a “conjunctio objecti cum potentia”, and he observed that for this “conjunctio” intentional species are required<sup>107</sup>. Their need may be demonstrated “ex inductione”, that is, on the basis of experience. A *real* union between object and cognitive power is impossible. Hence, the conjunction occurs “per vicaria objecti speciem”. Furthermore, perceptual and cognitive capabilities in se are “indifferent”, that is, they need to be determined by specific contents. In the case of the intellect this determination requires an internal principle, because the human mind cannot be touched by sensible things<sup>108</sup>.

Species are needed to actualize the perceptual and cognitive powers. For this actualization ‘external’ principles, such as the phantasm (in the case of the intellect) or the sensible species received only in the sense organs (in the case of perception), do not suffice<sup>109</sup>. The material phantasms cannot determine an immaterial faculty, since:

(...) intellectus est potentia alterius ordinis ab omni potentia sensitiva: ergo in proprio ordine habet omnia requisita ad [actum] cognitionis.<sup>110</sup>

With this concise statement Suarez set bounds to the naturalistic tendencies of Peripatetic psychology, and set out the framework for his own theory of knowledge acquisition. Knowledge is the product of a strictly *immanent* act, although for its object it depends on sensible reality. In other words, human cognition is

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<sup>107</sup> Cf. *Commentaria una cum quaestionibus in libros Aristotelis De anima*, ed. Castellote, vol. II, Madrid 1981, disp. V, q. 1, 288-90; *De anima*, ed. André, III, c. 1, 614a, where he invokes the authority of Aristotle and Augustine (*De Trinitate*, XI, c. 2).

<sup>108</sup> *Commentaria in De anima*, ed. Castellote, disp. V, q. 1, 292: “Quando objectum unitur potentiae, media specie, necesse est ipsam speciem esse intrinsece in potentia cognoscente”; cf. *De anima*, 615a.

<sup>109</sup> See *Commentaria in De anima*, l.c., 292; cf. *De anima*, 615a, where Suarez polemized not only with those who regard the phantasm as sufficient to cause intellectual acts, but also with Simplicius and Philoponus who presumed the (sensible) species to be received in the sense organ and not in the senses themselves.

<sup>110</sup> *Commentaria in De anima*, l.c., 294; cf. *De anima*, 615b.

“actio” and not “passio”<sup>111</sup>. According to Suarez, the act of cognition does not coincide with the reception or production of a species, but consists essentially in a judgment<sup>112</sup>. In this sense, his theory resembled the accounts given by Bonaventure, Zabarella, and Piccolomini<sup>113</sup>.

The specific relationship between intellect and body entails that the intellect receives species. The immanence of the cognitive act qualifies this reception as intramental. Before dealing with the problem of the modalities of this ‘reception’, Suarez specified the ontological nature of the species.

### 1.6.2. Nature and function of the species

The intentional species of both the senses and the intellect are real beings, not substances, but accidents<sup>114</sup>. Sensible and intelligible species relate to the same object, but in the intellect the species are spiritual and indivisible, while in the senses they are material and divisible<sup>115</sup>. Suarez did not discuss the relation between sensible and intelligible species in this context; here he simply wanted to point out their general function in the process of knowledge.

Some thinkers erroneously believed that the species of the inner senses are corpuscles, that is, “spiritus animales in cerebro”<sup>116</sup>. It is not easy to see which contemporaries of Suarez might be meant here; Suarez was probably referring to Democritean and Epicurean conceptions. Notice that a similar view of the sensible species would later appear in Gassendi and in the early Hobbes.

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<sup>111</sup> *Commentaria in De anima*, V, q. 4, 360; cf. *De anima*, 628b. For discussion of this aspect, see Ludwig, *Das akausale Zusammenwirken*, 24; W. Hoeres, “Bewusstsein und Erkenntnisbild bei Suarez”, on p. 213; Castellote, *Die Anthropologie des Suarez*, 184. Some medieval Averroist philosophers characterized knowledge as “passio”; cf. Taddheus of Parma and James of Piacenza, discussed in ch. IV, § 4.4 and 6.

<sup>112</sup> See *Commentaria in De anima*, Disp. V, q. 4; cf. *De anima*, III, c. 4. For discussion, see M. Lundberg, *Jesuitische Anthropologie und Erziehungslehre in der Frühzeit des Ordens (ca. 1540—ca. 1650)*, Uppsala 1966, pp. 99, 108-109.

<sup>113</sup> See ch. II, § 1.7, and IX, § 1, respectively.

<sup>114</sup> See *Commentaria in De anima*, V, q. 2, 296f; cf. *De anima*, III, c. 2, 616a. If they were substances, the human mind would have a divine creative power; cf. 616b.

<sup>115</sup> *Commentaria in De anima*, I.c., 316; cf. *De anima*, 619b.

<sup>116</sup> *Commentaria in De anima*, I.c., 298; cf. *De anima*, 616b.

Also Descartes, who admittedly rejected the doctrine of species, would hypothesize the existence of animal spirits and attribute to them a role in the process of sense perception<sup>117</sup>.

The species has a proper being and is distinct from the actual perception or knowledge. Against Caietanus, Suarez argued that the species are accidental and that, for this very reason, knowledge is an accidental union<sup>118</sup>. And since both species and cognition are qualities, the latter cannot be the formal effect of the former. The species, which as such is “ignota”<sup>119</sup>, is considered as a “similitudo formalis”<sup>120</sup>. The species should not be seen as the formal *cause* of intellection, however, but rather as contributing to it “effective”<sup>121</sup>.

The mind has an independent activity and, in the generation of its own act, it cannot be ‘formally’ influenced by representations that are connected to sensory capacities. The formal assimilation of the cognitive content occurs in the mental act, for which the intellectual soul takes full causal responsibility<sup>122</sup>. As we shall see below, however, corporeal reality still has a causal role to play, although at this stage that role remains rather vague.

Stressing the causal function of the species while at the same time denying that it may ‘formally’ contribute to the generation of knowledge, Suarez made implicit reference to the fifteenth-

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<sup>117</sup> See ch. XI, § 1-2.

<sup>118</sup> *Commentaria in De anima*, l.c., 300-304; cf. *De anima*, 617ab.

<sup>119</sup> Cf. *Commentaria in De anima*, l.c., 306; cf. *De anima*, 618a.

<sup>120</sup> *Commentaria in De anima*, l.c., 322. The text edited by Alvarez contradicts this view; cf. *De anima*, 620b: “Species intentionalis non repraesentant formaliter objecta, sed effective tantum”. For a similar position, see already Hervaeus Natalis, *De intellectu et specie*, 143-144, examined in ch. IV, § 1.3; and Goes (subsection 5). Alvarez argued that, if the species transmitted a formal effect to the cognitive power, then the latter would be tied down to that specific representation and, consequently, would know exclusively the object related to it; cf. *De anima*, 620b-621a. The species may be said to cause the formal representation only insofar as it is conceived as ‘seed’ with a germinal force; cf. *De anima*, 621a-b: “nimirum, quia ut semen in se organa, vel potentias formaliter non habet, sed vim effective formatricem organorum in foetu: ita impressae species formales objectorum repraesentationes non sunt, sed tantum causales.”

<sup>121</sup> *Commentaria in De anima*, l.c., 304-306; cf. *De anima*, 617b-618a.

<sup>122</sup> For discussion, see Hoeres, “Bewusstsein und Erkenntnisbild bei Suarez”, 199f.

century schoolman Crockaert, who used a similar distinction<sup>123</sup>. According to Suarez, the species should not be seen as a dematerialized, picture-like copy of the object to be known. The relation between “repraesentans” and “repraesentatum” is not a mirror-like mapping, in other words, it is not a one-to-one correspondence. When Suarez claimed that the species does not contribute ‘formally’, but only ‘effectively’, to the acquisition of knowledge, he wanted to emphasize that the species is a causal principle that is *functional* in the specification of mental acts, to be considered only in terms of the task (“munus”) it performs. But what exactly is the role of the species in the economy of human knowledge? This question is addressed in chapter 4 of the third book, where Suarez discussed the distinction between cognitive act and species.

Suarez did not accept any real distinction between active and receptive powers in the human soul, because “impossibile [est] haec duo, scilicet [agere] et recipere, separare omnino et diversis potentiis tribuere”. Furthermore, the cognitive power cannot be purely receptive (*pace* Paul of Venice, Nifo, and Godfrey), because then human knowledge would depend “ab extrinseco”. Visual experience teaches us to pay *attention* to what the eyes receive<sup>124</sup>. At this point, introducing the notion of attention, Suarez came up with a crucial aspect of his own position, which in fact combines elements from Thomistic and Olivean psychology<sup>125</sup>. Against Scotus, Henry of Ghent and Giles, Suarez argued that every cognitive activity has an internal origin:

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<sup>123</sup> Discussing the Durandian opposition that the species must be the first known, Crockaert replied that the species may indeed be considered as the first known, but only “causaliter” and not “formaliter”. In other words, the species counts for its causal function in the intellect’s first operation. As information-bearing symbol it is an integrating element of a cognitive activity, namely, the acquisition of information about single material essences. This allows us to see it as ‘causally’ known. Thus, Crockaert was prepared to accept the legitimate grounds of Durandus’ objection, but without repudiating Aquinas’ teachings, because no direct awareness (‘formal’ knowledge) of the species is supposed. For discussion, see ch. V, § 2.7.

<sup>124</sup> *Commentaria in De anima*, disp. V, q. 4, 350-354; cf. *De anima*, III, c. 4, 627a-b.

<sup>125</sup> For a similar synthesis, see once more Crockaert, discussed in ch. V, § 2.7. For the crucial role of the mind’s attention in the acquisition of knowledge, cf. Olivi (ch. III, § 3.4), Fracastoro (ch. VI, § 1.5), and Zabarella (ch. IX, § 1.1).



Potentiam cognoscens habet propriam et immediatam activitatem circa actum suum.<sup>126</sup>

The potentiality of the intellect regards the intelligible species. Yet, this potentiality should not be seen as absolute, for the intellect can also have activities that are independent from both sense and species. As was suggested earlier, the information conveyed by the species is not a sufficient condition for the production of knowledge. If the act of knowledge would depend only on the species, the soul would no longer be a genuine principle of knowledge. Moreover, experience teaches us that the mind, once informed by a species, must also pay attention to it. Thus, Suarez's philosophy of mind resumed essential aspects of the Augustinian and Olivean lore<sup>127</sup>.

Suarez came to the conclusion that the causal responsibility for actual knowledge can be attributed only to the cognitive power as informed by the species<sup>128</sup>. In this way he wanted to do justice both to the immanence of the mental act and to its objective reference. Suarez's conclusion entails that the Scotistic view of a realization of the species before the act may be accepted, even in a chronological sense. Actual knowledge is actual assimilation:

[ergo] necesse est quod potentia cognoscens habeat formam quae sit principium assimilandi; huiusmodi autem est species; ergo.<sup>129</sup>

So far, a satisfactory explanation has been given of the need and function of the species, but their origin has remained rather vague, not to say problematic—given the fact that Suarez's general framework tends to overstress the role of mind, and to deny any direct impact of sensory representations on the production of knowledge.

<sup>126</sup> *Commentaria in De anima*, l.c., 360; cf. *De anima*, 628b.

<sup>127</sup> Cf. in general *De anima*, disp. V, q. 2, on the fundamental role of the mind's "attentio" in the generation of knowledge. For discussion of the relationship between Suarez and Olivi, see Hoeres, "Bewusstsein und Erkenntnisbild bei Suarez", 203-209; Ludwig, *Das akausale Zusammenwirken*, 31 and 49f.

<sup>128</sup> *Commentaria in De anima*, l.c., 364: "Principium integrum productivum cognitionis est potentia informata specie." Cf. *De anima*, 629b

<sup>129</sup> *Commentaria in De anima*, l.c., 364; cf. *De anima*, 629b; for the view of knowledge as an active assimilation, see also Cusanus, discussed in ch. VI, § 1.1.

## 1.6.3. Perceptual and mental acts: the generation of species

Suarez discussed the production of the intelligible species in its traditional context, namely, that of the relation between the agent intellect and the phantasms. The need of the former is based on the causal insufficiency of the latter with respect to the intellectual realm<sup>130</sup>. But how do the phantasm and the agent intellect cooperate in generating the species? Suarez started his discussion of this question with a review of some of his illustrious predecessors.

Caietanus' doctrine of an 'objective' illumination is summarized in three points: (a) the agent intellect unveils the quidditative essence; (b) before the production of the intelligible species, a universal is abstracted; (c) the illuminated phantasm produces the intelligible species<sup>131</sup>. Suarez duly identified the most troublesome aspect of Caietanus' position, namely, that the illumination of the phantasm should precede the production of the intelligible species<sup>132</sup>. No matter how the agent intellect's assistance to the phantasm is conceived, a material entity cannot be changed by a spiritual agent. Moreover, if the phantasm were capable of representing the universal, then the phantasy should be able to grasp the latter, which is unacceptable.

Suarez also rejected Capreolus' theory of the phantasm as instrument of the agent intellect, and his idea of a virtual contact between the two. In the first place, an inferior instrument cannot cause a superior effect. Secondly, it remains unclear what the agent intellect might 'add' to the phantasm<sup>133</sup>. Capreolus' pur-

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<sup>130</sup> *De anima*, IV, c. 2, 716a: "Hinc vero oritur quaestio proposita: nam intellectus non movetur nisi ab objecto interius in phantasmate repraesentato, phantasma autem materiale est: ergo non potest agere in intellectum spiritualem, spirituales species: aliud ergo principium accomodatius quaerendum est, quem vocant agentem intellectum."

<sup>131</sup> *De anima*, 716b-717a.

<sup>132</sup> For an analysis of Caietanus' doctrine of illumination, see ch. VII, § 2.1. Suarez frequently polemized with Caietanus' psychology; see also *De anima*, III, c. 2.

<sup>133</sup> *De anima*, 717b-718a. For the virtual contact, see already Godfrey of Fontaines (discussed in ch. III, § 3.3); Suarez also referred to Caietanus, Apollinare Offredi (see ch. V, § 3.3), Gaetano of Thiene, Jandun, Giles, Albert, and Thomas. For discussion, see Giacon, *La seconda scolastica*, vol. II, 218; Ludwig, *Das akausale Zusammenwirken*, 36; De Vries, "Die scholastische Psychologie", 337.

ported solution is thus merely verbal<sup>134</sup>. Other authors have attempted to solve the puzzle by assuming that the species is spiritual by virtue of its connection with the agent intellect, and representative by virtue of its sensory origin<sup>135</sup>. According to Suarez, however, these two features of the species cannot be isolated<sup>136</sup>.

The solution proposed by Suarez himself was in effect a combination of views, borrowed on the one hand from Jean de la Rochelle and Olivi (the idea of a "colligantia" or sympathy between mind and body<sup>137</sup>), and on the other hand from Giles of Rome, Capreolus, and Sylvester of Ferrara (the theory of the common "radicatio" of perceptual and cognitive faculties in the human soul). The agent intellect and the phantasy are faculties of the selfsame soul, and their common 'root' makes it possible for them to cooperate without any real mutual influence or contact:

Intellectus agens nunquam efficit speciem, nisi a phantasiae cognitione determinetur. (...) Praedicta determinatio non fit per influxum aliquem ipsius phantasmatis, sed materiam, et quasi exemplis intellectui agenti praebendo, ex vi unionis, quam habent in eadem anima.<sup>138</sup>

Thus, the production of species is based on a kind of sympathy between ontologically different powers that are integrating parts of the same soul. Intellect and phantasy do not so much causally cooperate, but they have simultaneous or parallel acts<sup>139</sup>. In the final conclusion of this chapter, Suarez defined the central operation of the agent intellect's as consisting essentially in the production of intelligible species:

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<sup>134</sup> *De anima*, 718a: "Nam quod fingitur uniri intellectum agentem phantasmati per assistantiam et contactum virtualem, verba nuda sunt, quoniam re ipsa nullam unionem concipit intellectus praeter dictam radicationem." With the notion of "radicatio"—present in Giles, Capreolus, and others—Suarez anticipated his own solution.

<sup>135</sup> This may be a reference to Thomas, *De veritate*, q. 10, a. 6, ad 7: "et ideo intellectus possibilis recipit formas ut intelligibiles actu ex virtute intellectus agentis, sed ut similitudines determinatarum rerum ex cognitione phantasmatum (...)."

<sup>136</sup> *De anima*, 718b.

<sup>137</sup> For the use of Olivi, see, among others, also *De anima*, III, c. 9, n° 10. For discussion, see Hoeres, "Bewusstsein und Erkenntnisbild bei Suarez", 203 and 205, where the cooperation between phantasy and agent intellect is characterized as the unity of apperception.

<sup>138</sup> *De anima*, 719a-b.

Intellectus agens, ut sic, nullam aliam actionem habet quam speciei intelligibilis effectiorem diversis nominibus significatam.<sup>140</sup>

Making things actually intelligible, illuminating phantasms, abstracting species from phantasms, illustrating the first principles—these are all the selfsame operation. Indeed, the illumination of phantasms may be characterized as the generation of species in the possible intellect which represent at a mental level the content of sensory representations. A thing becomes actually intelligible “per productionem speciei in qua res spiritualiter repraesentatur”<sup>141</sup>.

#### 1.6.4. Abstraction

Suarez's specific interpretation of an abstraction of species from phantasms is typical of his idiosyncratic stance in psychology. The intelligible species is not “abstrahibilis” in the sense that it could be mixed with sensory representation, because an accident cannot move from one subject to another. The abstraction is rather a matter of “elevatio”:

(...) illaque elevatio a materiali repraesentatione phantasmatis ad spiritualem repraesentationem, speciei intelligibilis dicitur abstractio.<sup>142</sup>

Thus, the abstraction of the species is a purely intramental phenomenon, which depends on the phantasm only insofar as the latter's *presence* is required<sup>143</sup>. The phantasm has no instrumental causality; as “causa quasi exemplaris”<sup>144</sup> it merely offers the occasion for a mental operation to take place. Suarez probably believed that the unity of the soul, as the ensemble of perceptual and cognitive faculties, is sufficient to explain the relationship between mind and phantasm., in such a way that no causal relation between intel-

<sup>139</sup> See also Ludwig, *Das akausale Zusammenwirken*, 24, 28, and 50.

<sup>140</sup> *De anima*, 720a. See also Giacon, *La seconda scolastica*, vol. II, 219-22.

<sup>141</sup> *De anima*, 720b; cf. Giacon, *La seconda scolastica*, vol. II, 214-15; Lundberg, *Jesuitische Anthropologie*, 122; Hoeres, “Bewusstsein und Erkenntnisbild bei Suarez”, 198.

<sup>142</sup> *De anima*, 721b.

<sup>143</sup> For discussion, see also Castellote, *Die Anthropologie des Suarez*, 191-2; Lundberg, *Jesuitische Anthropologie*, 122.

<sup>144</sup> See *De anima*, IV, c. 2, n° 11, 719.

lect and sensory representation is required for the generation of sense-dependent cognitive contents.

The occasionalist explanation of the sense-dependence of intellectual cognition is a clear token of Suarez's affinity with Neoplatonic interpretations of Aristotle's psychology, which we have seen in Renaissance authors such as Marsilio Ficino, Marcantonio Genua, and Teofilo Zimara<sup>145</sup>. An important point of difference should also be mentioned here, however: Suarez did not endorse any type of nativism<sup>146</sup>. The mind produces immaterial representations whenever the inner senses enable it to perform a 'parallel' operation. The intelligible species is an exclusive product of the mind, but it is not innate. It arises or emanates in the same instant when the phantasy generates a phantasm<sup>147</sup>. Elsewhere, Suarez defined this non-essential relationship between the operations of the intellect and the inner sense as "concomitantia":

Hinc ergo oritur inter potentias has tam naturalis concomitantia quae essentialis non est, sed ex actuali operatione proveniens, (...).<sup>148</sup>

Knowledge conveyed by the intelligible species, produced by the agent intellect, regards singular entities: the agent intellect abstracts a "speciem Petri", not a "speciem hominis"<sup>149</sup>. On the basis of the effects of the agent intellect's operation, the possible intellect may then abstract the universal nature contained in the species of the singular<sup>150</sup>. Thus, the 'abstraction' of the intelligible species is attributed to the agent intellect, while the 'abstraction' of the universal is attributed to the (informed) possible intellect<sup>151</sup>. As a

<sup>145</sup> See ch. VI, § 1.3 and ch. VIII, § 1. Suarez's affinity with Genua was already noticed by Kessler, "The intellectual soul", 515.

<sup>146</sup> Ludwig, *Das akausale Zusammenwirken*, 56-57, speaks of a preliminary presence of the species in the mind, but the text he refers to is about angels; cf. *De anima*, IV, c. 8, n° 13, p. 745.

<sup>147</sup> *De anima*, IV, c. 8, 745a. See Lundberg, *Jesuitische Anthropologie*, 108-109.

<sup>148</sup> *De anima*, IV, c. 7, 740a. Cf. the affinity with the notion of "colligantia" in Jean de la Rochelle and Olivi, mentioned earlier.

<sup>149</sup> *De anima*, IV, c. 3, 722a-24b. See also *De angelis*, II, c. 8, n° 6, in *Opera*, vol. II, 142b-143a, for the species of particular things.

<sup>150</sup> *De anima*, 725b-26a.

<sup>151</sup> *De anima*, IV, c. 4, 728a. See also the position of Goes in the Coimbra *De anima* commentary, and that of Melancthon (ch. VII, § 3.1.2) and Zabarella (ch. IX, § 1.1).

matter of fact, the universal does not arise from 'abstraction', but rather from a process of "comparatio"<sup>152</sup>. The intelligible kernel of substantial reality is known by discursive reasoning on the basis of the information made available by the agent intellect<sup>153</sup>.

Suarez elsewhere qualified the operations of the agent and the possible intellect as "transiens" and "immanens", respectively<sup>154</sup>. The possible intellect surpasses the agent intellect in excellence: by producing the species, the agent intellect realizes only the preliminary conditions under which intellectual cognition can take place, while this cognition as such depends on the possible intellect alone. The active mind provides the intelligible species: as natural agent it must repair a 'defect' in the primary object of cognition, namely its materiality<sup>155</sup>. The agent intellect serves an indispensable instrumental function<sup>156</sup>, because in its "operari" the human intellect depends on the senses. Once it has been informed, the possible intellect may attend to the various aspects of the information conveyed by the species.

#### 1.6.5. Concluding remark

Suarez was one of the most influential spokesmen of later Scholastic philosophy, which after the Council of Trent would make its conquest of Europe. His cognitive psychology sprang from a dialogue with the Scholastic and broader Peripatetic tradition. According to him, the (inner) senses have no direct influence on the generation of knowledge, and yet sense-dependent intelligible species are needed, because the mind has no innate contents.

<sup>152</sup> *De anima*, 730b; cf. the positions of Pomponazzi (ch. VII, § 1.1), Telesio (ch. VIII, § 3.2) and Giulio Castellani (ch. VIII, § 2.1.).

<sup>153</sup> *De anima*, 732a f. At the turn of the 13th and 14th century, a similar position was held by Richard of Middletown and Thomas Sutton; cf. ch. III, § 4.2 and IV, § 1.4.

<sup>154</sup> *De anima*, IV, c. 8, 741a.

<sup>155</sup> *De anima*, 744b. In this context Suarez polemized with Nifo, *De intellectu*, tr. IV, c. 21 (containing an exposition of Averroes' view of the possible and agent intellect). Notice that also Nifo in the later version of his commentary on *De anima* came close to a position like that of Durandus, and that he defined the agent intellect as a mere disposition; cf. ch. VI, § 3.3.

<sup>156</sup> According to Suarez, the agent intellect is first of all a 'technician'; for the agent intellect as "artifex", see Thomas Sutton, *Quaestiones ordinariae*, 466, and Taddheus of Parma, *Quaestiones de anima*, 145.

Suarez's position regarding the origin of intelligible species involved a fundamental reorientation with regard to the puzzle of reception and generation, which had tantalized so many schoolmen before him. Intelligible species are received only in the sense that they are produced by the agent intellect occasioned by the presence of phantasms. Because the species are sense-dependent, they regard only individuals and not universals. The intelligible species are effective causes, not formal causes. Indeed, the 'reception' of species is not sufficient to trigger cognition, which is a purely intramental *act*.

Some aspects of Suarez's view of the origin of cognition resumed core ideas of Augustinian cognitive psychology, in particular as it had been developed by Peter Olivi. Like this medieval master, Suarez ruled out any direct influence of sense on mind, and attached great importance to the mind's "attentio" in the generation of knowledge. There were also notable differences, however. Suarez eliminated neither the agent intellect nor the intelligible species as an unknown, mediating representation. In this respect, he successfully steered clear of the stalemate position between static object and dynamic mind—a dynamic mind whose outward-bound intentionality in Olivi's hands seemed insufficient to warrant an effective grasp of the sensible world.

The view that the intramental production of intelligible species is occasioned by the presence of phantasms in the inner senses, also reminds of certain Neoplatonicizing modifications of the species theory. In the time to come it would deeply influence later schoolmen. Moreover, it would pave the way for Descartes' well-known account of the origin of perceptual ideas, generated by the mind on the occurrence of qualified brain patterns<sup>157</sup>.

### 1.7. Conclusion

The first generation of Spanish schoolmen highlighted three notions that would profoundly influence generations to come. In the first place, intelligible species have a strictly effective causality, that is, they are functional in triggering mental acts. They only

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<sup>157</sup> See ch. XI, § 1.2.

provide the necessary conditions for the immanent cognitive act to take place, but they are not formally involved in the act itself. Closely related to this view of the cognitive role of intelligible species is the idea of an effective illumination of the phantasms, for the illumination of phantasms is generally identified with the generation of intelligible species. Secondly, intelligible species are said to originate from the mind's potentiality. The species are not produced "ex novo", but only in "repraesentando". Yet, they are sense-dependent, carrying information about individual entities in the sensible world. As we have seen, this view had several precursors in the Middle Ages and in the Renaissance<sup>158</sup>. However, it was not until the time of the Spanish schoolmen that the view of intelligible species as informing the mind about individuals and not about universals became generally accepted. Finally, the Spanish schoolmen frequently identified the intelligible species as an impressed image. This troublesome view would later provoke the biting criticism of the species doctrine by modern philosophers of the seventeenth century, such as Descartes, Thomas Hobbes, and Malebranche.

## § 2. FROM COMMENTARY TO COURSE

By the end of the sixteenth century, the philosophical textbook became a serious competitor to other material on the philosophical reading list. The works of Aristotle, and traditional commentaries on these works, were gradually superseded by synthesizing manuals. It was increasingly felt that traditional works failed to meet the requirements of the new era that was dawning. There were a number of reasons for this. Thus, the mode of exposition used by traditional works was less than ideal for pedagogical purposes. Moreover, it was generally recognized that Aristotelian philosophy, even if valid, did not cover all fields of knowledge. Many *cursus* were set up to fill in the gaps left by Aristotelian doc-

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<sup>158</sup> Cf. Thomas Wilton (ch. IV, § 4.1), Gregory of Rimini (ch. IV, § 3.4), and Paul of Venice (ch. V, § 3.1).



trine<sup>159</sup>. As time went by, and criticisms of Peripatetic philosophy became louder, some of these manuals became un-Aristotelian or even downright anti-Aristotelian<sup>160</sup>.

The age of the philosophical textbook began with the Reformation. In the sixteenth century, in Catholic as well as in Protestant circles, there was a renewed interest in concise, state-of-the-art surveys of the basic fields in philosophy. Philip Melanchthon laid down the Aristotelian foundations of the Lutheran educational programme<sup>161</sup>. After a brief period of hesitation, also the Dutch Calvinists accepted the authority of Aristotle<sup>162</sup>. In Catholic circles the Aristotelian approach was epitomized by the Jesuits. Their endorsement of Aristotle's teachings in the fields of metaphysics, logic, natural philosophy, and moral philosophy expressed itself in an impressive series of manuals that were used at Jesuit colleges throughout the world.

Until the early seventeenth century traditional commentaries on Aristotle still outnumbered the new textbooks. But then the balance changed so fast that by 1620 relatively few commentaries were written. Moreover, what was published by way of commentary had by then been restructured as part of a philosophical course<sup>163</sup>.

## 2.1. *Early seventeenth-century De anima commentaries*

### 2.1.1. Francisco Murcia de la Llana

The commentary on *De anima* by Francisco Murcia de la Llana<sup>164</sup> submitted some fairly idiosyncratic arguments in defence of the

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<sup>159</sup> This is most apparent in textbooks on natural philosophy, where, among others subjects, technical astronomy, optics, and botany were added to the traditional subjects.

<sup>160</sup> Cf. Maignan, discussed in ch. XII, § 3.1. For discussion, see P. Reif, "The textbook tradition in natural philosophy", in *Journal of the History of Ideas* 30(1969), 17-32; Ch.B. Schmitt, "The rise of the philosophical textbook", in *Cambridge History of Renaissance Philosophy*, on pp. 792-93, and 801-3.

<sup>161</sup> Cf. the manuals written by Melanchthon.

<sup>162</sup> See ch. XII, § 1.

<sup>163</sup> See, for example, the *De anima* commentary of Mastrius and Bellutus, and that of the College of Alcalá, discussed in the next section.

<sup>164</sup> Franciscus Murcia de la Llana, fl. in the 17th century; professor of philosophy in Alcalá.

intelligible species. To convince the reader that intelligible species are needed, Murcia first invoked the authority of Plato (*sic*), Augustine, Aristotle, and Thomas. He then observed that the intellect is able to know what it desires, and from this postulate inferred that there must be an intrinsic principle that enables the mind to form knowledge. Furthermore, the human mind often perceives "impossibilia" of which there can be no phantasm; therefore it must at least have formed an intelligible species of these objects<sup>165</sup>. Notice that this argument implies that intelligible species are not necessarily sense-dependent but may be the result of an extraordinary form of perception<sup>166</sup>.

In a next section Murcia described the nature of intelligible species, which are said to be spiritual accidents stored in intellectual memory. In accordance with Suarez, he defined the species as 'seeds' on the basis of which the cognitive power is able to 'give birth' to intellectual conceivings. Unlike Suarez, he neatly distinguished between species and "formalis similitudo"<sup>167</sup>.

Following the lines set out by Suarez, Murcia attempted to show that intelligible species are needed to explain some specific features of human cognition, rather than to bridge the gap between mind and material reality. In this respect his position is typical of the transitional stage between the classical theory of species and the modern doctrine of ideas.

### 2.1.2. Agostino Pallavicini and Michael Zanardus

At first glance, the paraphrasistic exposition on *De anima* by Pallavicini<sup>168</sup> is not a paragon of originality. Pallavicini accepted as self-evident that there are intelligible species, and that they rep-

<sup>165</sup> *Selecta circa libros Aristotelis de anima subtilioris doctrinae, quae in Complutensi Academia versatur*, (...), Madrid 1604, 158va-b.

<sup>166</sup> Already François de Meyronnes had argued that St. Paul must have formed intelligible species of his raptus, for otherwise he would not have been able to recall it; for discussion, see ch. IV, § 1.2.

<sup>167</sup> *Selecta circa libros Aristotelis de anima*, 160rb-vb. Notice, however, that in Suarez's *De anima* text, prepared by Alvarez, a distinction was drawn between species and formal similitude.

<sup>168</sup> Augustinus Pallavicinus, † 1618; from Genua; studied under the Jesuits in Rome.

resent the nature of things<sup>169</sup>. Yet, his relatively independent approach to the issue of mental representation led him to endorse positions that are very interesting from a historical point of view.

If the intellect is to know specific objects, it needs to be excited by species impressed by a "motor"<sup>170</sup>. Particularly interesting here is Pallavicini's insistence on the fact that species are produced by the phantasy, and that they represent the cognitive object "clare & distincte":

à phantastica virtute cognita intelligibiles in intellectu species universales rerum naturas clare, distincteque repraesentantes producere possunt.<sup>171</sup>

Pallavicini pointed out that the species impressed by the phantasms regard material objects as singular entities<sup>172</sup>. A couple of pages later, he was more specific about the causal import of sensory representations in the acquisition of universal knowledge. The production of species representing universal natures requires a union of the phantasms and the agent intellect. Here he repeated the claim that sense-dependent intelligible species may represent the quidditative essence in a clear and distinct way<sup>173</sup>.

Reading Pallavicini's remarks on intelligible species as just another phase in the Aristotelian psychological tradition, the conclusion can only be that his position was rather eclectic, a typical example of Italian psychology after the decline of the Paduan School, but before the influence of the Spanish schoolmen made itself felt<sup>174</sup>. However, if we read Pallavicini in the light of the anti-

<sup>169</sup> Cf. *Explanatio paraphrastica in libros Aristotelis de Anima*, Mediolani 1610, 242 and 245.

<sup>170</sup> *Explanatio paraphrastica de Anima*, 248.

<sup>171</sup> *Explanatio paraphrastica de Anima*, 246.

<sup>172</sup> *Explanatio paraphrastica de Anima*, 248-49.

<sup>173</sup> *Explanatio paraphrastica de Anima*, 256-57: "cum eis [sc. phantasmatibus] unum agens totale constituitur productivum speciei intelligibilis, in qua non modò compositum, seu concretum singulare, & confusum appareat, sed omnes in ea quidditates clarè, ac distinctè eluceant. (...) etsi enim phantasmata rei singularis, & confusae speciem imprimere in intellectu possint, eam tamen omnium quidditatum distinctè repraesentativum efficere nequeunt, nisi ob intellectus agentis unionem perficiantur, atque illuminentur." Also Taddheus of Parma postulated the union of agent intellect and phantasm as a condition for the generation of species and cognition; cf. ch. IV, § 4.4.

<sup>174</sup> In this sense, it resembles the *De anima* commentary of Agostino Faba, discussed in ch. IX, § 1.4.

Aristotelian psychology developed by thinkers such as Descartes, a new and different type of interest asserts itself: Pallavicini's idea of illuminated phantasms producing clear and distinct mental representations is the exact opposite of Cartesian cognitive psychology. Indeed, Descartes believed that perceptions, insofar as they are clear and distinct, depend on the activity of the mind alone, and that any *causal* impact of the (inner) senses on the production of mental representations and cognitive contents should be rejected.

Also the *De anima* commentary of Zanardus<sup>175</sup> was a typical product of a late 'pre-Spanish' Scholastic debate<sup>176</sup>. The objections he advanced against the intelligible species were all well-known<sup>177</sup>, as were the positive arguments he used to defend the species<sup>178</sup>.

### 2.1.3. Antonio Rubio

Antonio Rubio<sup>179</sup> represents a generation of authors whose commentaries on *De anima* were elaborations of the ideas developed by the generation of Toletus and Suarez<sup>180</sup>. With few exceptions, Rubio followed Suarez on the function of the agent intellect, the

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<sup>175</sup> Michael Zanardus, 1570 Bergamo—Milan 1642; entered the Dominican Order in 1586; between 1596 and 1616, lector of theology and philosophy, in Milan, Verona, Venice, and other places in North-Italy.

<sup>176</sup> See, for example, *Commentaria cum quaestionibus in tres libros De anima Aristotelis*, Venetis 1617, 185f, for the debate with Scotus, Capreolus and Caietanus on the role of the intelligible species in the production of intellection.

<sup>177</sup> *Commentaria cum quaestionibus in tres libros De anima Aristotelis*, 184a: (1) the intellect would know more things simultaneously; (2) if knowledge were based on a once acquired species, then erring would become impossible; (3) of some things there are no phantasms; (4) the species is not the first thing known, hence it is redundant.

<sup>178</sup> *Commentaria cum quaestionibus in tres libros De anima Aristotelis*, 185: (1) the material things are not intelligible; (2) the intellect needs to be actualized; (3) the knowledge of absent objects.

<sup>179</sup> Antonius Rubius, 1548 Rueda—1615 Alcalá; 1569 joined the Jesuits; for 25 years in Mexico; 1577 doctor there; taught philosophy from 1577 and later theology there; by 1599 again in Spain; for more biographical information, cf. C. Falcón de Givés, *El P. Antonio Rubio, S.J. (1548-1615). Sus Comentarios a los libros "De Anima" de Aristóteles*, Mexico 1945.

<sup>180</sup> *Commentarii in libros Aristotelis Stagyrtae (...), de Anima (...)*, Lugduni 1613.

interpretation of the doctrine of species, the primacy of the knowledge of singulars, and the nature of human intellection<sup>181</sup>.

Rubio looked upon the production of intelligible species as the main task of the agent intellect, because the species are indispensable for a soul that is the form of the body, and that is yet a "tabula rasa"<sup>182</sup>. This move enabled him (as it had enabled Suarez) to skirt a number of mind-body problems in connection with the exact relationship between the active mind and sensory representations. The agent intellect does not impress upon the phantasms a kind of spiritual light, as Toletus had it<sup>183</sup>, for the ontological gap between the two does not allow of any such contact. Rubio also declined Caietanus' 'formal illumination' and the proposals made by Capreolus and by Sylvester of Ferrara, because these authors left it unexplained what the activity of the agent intellect precisely consists in<sup>184</sup>. According to Rubio, the operation of the agent intellect that precedes the intellect does not regard the phantasms but only the possible intellect:

(...) intellectum agentem unicum habere actionem intellectioni praeiviam, & hanc non circa phantasmata, sed circa intellectum possibilem, quae est productio speciei intelligibilis in eo, ac de eius potentiaeducta, per quam repraesentatur ei obiectum materiale repraesentatum in phantasmate, (...).<sup>185</sup>

As in Pallavicini, the intelligible species that are produced in the possible intellect represent the intelligibles "clare & distincte"<sup>186</sup>.

According to Rubio, the illumination of the phantasms is a "metaphorica locutio" for describing the production of intelligible species. By limiting the activity of the agent intellect to the possible intellect, Rubio avoided the delicate question of how an immaterial agent may come into contact with physiologically embodied

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<sup>181</sup> He did not accept the denial of a real distinction between agent and possible intellect as advocated by Toletus, the College of Coimbra, Suarez, and Nifo. He qualified the opinion of Thomas as "probabilius"; cf. *Commentarii in de Anima*, 672-675.

<sup>182</sup> *Commentarii in de Anima*, 657-59.

<sup>183</sup> See § 1.3, for Toletus' doubts about this conception.

<sup>184</sup> *Commentarii in de Anima*, 660-664.

<sup>185</sup> *Commentarii in de Anima*, 664. See also p. 665, for the production of the intelligible species "ex novo".

<sup>186</sup> *Commentarii in de Anima*, 665.

representations<sup>187</sup>. But how did he explain the objective reference of cognitive contents? More to the point, did he reserve a role for the phantasm in the production of the species?

Rubio believed that the contribution of the phantasm goes beyond that of a mere material cause, but he admitted that this point is very hard to prove. Yet, he was convinced that the mere presence of the phantasm is not sufficient to produce the intelligible species. In this context he implicitly polemized with Suarez, observing that the phantasm cannot be a sort of exemplar cause, and that neither any alleged "sympathia" between perceptual and cognitive faculties can explain the possible causal import of sensory representations. Sensory representations have an effective instrumental causality, since they possess a "ratio objectiva" in their bearing a likeness to the represented object<sup>188</sup>. Rubio seems caught in a "petitio principii", however: the cognitive function of the phantasms is based on a postulated intrinsic property, but the precise role of this property in generating the species is left very much in the dark.

Intelligible species, considered as intrinsic principles ("virtutes"), are needed to explain the union of mind and object<sup>189</sup>. As in Toletus and Suarez, the intelligible species is produced by the agent intellect in the possible intellect, and represents a determinate, material individual<sup>190</sup>. This could hardly be otherwise, since the production of the agent intellect, at least in the soul's earthly state<sup>191</sup>, is conditioned by the singular phantasm<sup>192</sup>.

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<sup>187</sup> A possible background of Rubio's view of the intellectual illumination as regarding only the possible intellect may be the idea of a double illumination (concerning the phantasms and the possible intellect) espoused by Albert (ch. II, § 2.1), Giles of Rome (ch. III, § 2.3), and Lambertus de Monte (ch. V, § 2.6).

<sup>188</sup> *Commentarii in de Anima*, 666-70.

<sup>189</sup> *Commentarii in de Anima*, 683: "ergo necesse est, quod per aliquam virtutem propriam uniatur, & hanc virtutem vocamus speciem intelligibilem." The view that particular things are known by reflection can be based only on the authority of Thomas, whereas for the converse claim there may be given "efficaciores rationes" (p. 687).

<sup>190</sup> *Commentarii in de Anima*, 688: "(...) intellectus agens per se, & directe producit in intellectum possibilem speciem repraesentantem distincte singulare materiale determinatum."

<sup>191</sup> The intellect's dependence on the phantasms is not essential; see *Commentarii in de Anima*, 727: "(...) nam intelligere cum dependentia à phantasmate convenit animae, non ratione sui, nec ratione unionis ad corpus, ut sic; sed ra-

Knowledge of universals and of substantial essences becomes possible only after the intellection of singular entities<sup>193</sup>.

The reception of intelligible species is a necessary but not a sufficient condition for the generation of knowledge. Like Suarez, Rubio believed that the cognitive act comprises more than just the mind's being informed by the species<sup>194</sup>. The human soul is a vital principle. Its "conatus" expresses itself at a mental level in the form of *attention* for the representations received<sup>195</sup>. Here is another circularity in Rubio's psychology of cognition. The conditions for knowledge may involve procedures executed by unintelligent powers (agent intellect) that produce unknown representations (intelligible species), but genuine knowledge itself requires that the mind pays conscious attention to what it receives, for only then a 'formal' intellection is reached<sup>196</sup>.

## 2.2. *First Scholastic manuals*

### 2.2.1. Filippo Fabro

Fabro<sup>197</sup> was one of the main representatives of the Scotistic school in post-Tridentine days, when philosophical discussions

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tione status, ac talis modi imperfecti informandi corpus, & ideo non est necessarium ei convenire in quocumque statu."

<sup>192</sup> *Commentarii in de Anima*, 689; cf. 691: "(...) species verò nostri intellectus producuntur limitatae à phantasmate secundum repraesentationem: & ideo solum possunt repraesentare singulare ab eo repraesentatum."

<sup>193</sup> *Commentarii in de Anima*, 692-701.

<sup>194</sup> *Commentarii in de Anima*, 730: "(...) in tali receptione speciei adhuc non consistere intellectionem, vel sensationem, sed omnino necessarium esse effectivum concursum vitalem eiusdem potentiae informatae specie, sive per veram, & realem actionem, aut sine illa."

<sup>195</sup> For the crucial role of the mind's attention in the acquisition of knowledge, see Suarez (§ 1.6) and earlier: Olivi (ch. III, § 3.4), Fracastoro (ch. VI, § 1.5), and Zabarella (ch. IX, § 1.1).

<sup>196</sup> *Commentarii in de Anima*, 731-39.

<sup>197</sup> Filippo Fabro, 1564 Spianata—1630 Padua; studied in Ferrara from 1583, then in Padua and Rome; taught metaphysics from 1593 in Venice; then in Cremona, Parma, and Padua; since 1625 Provincial general; for more biographical information, see Schmitt, "Filippo Fabri's *Philosophia naturalis Io. Duns Scoti* and its relation to Paduan Aristotelianism", in *La tradizione scotista veneto-padovana*, ed. C. Bérubé, Padova 1979, 305-312, on p. 307; for discussion, see also Ch.B. Schmitt, "Filippo Fabbro and scepticism: A forgotten defence of Scotus", in *Storia e cultura al Santo di Padova*, ed. A. Poppi, Vicenza 1976, 309-312.

tended to assume strongly theological overtones. His *Philosophia naturalis*<sup>198</sup> was an attempt at a natural philosophy that might serve as an alternative to the philosophy developed at Italian universities in the fifteenth and sixteenth centuries.

At the outset of his defence of intelligible species, Fabro remarked that Scotus and Thomas in substance agreed on the need of impressed intelligible species<sup>199</sup>, and that they differed only "in modum ponendi", Scotus emphasizing the representational role of the species, while Aquinas (according to Fabro) saw the species as a mediating known (*sic*) form<sup>200</sup>. Basing himself on medieval (Henry of Ghent, Baconthorpe) and recent opponents (Piccolomini, Zabarella, Buccaferrea, and others), Fabro gave a long list of possible objections against the species<sup>201</sup>. He refuted all of these objections, and rephrased the arguments that had already been given by Scotus: (i) the qualified (proportionate) presence of the object; (ii) the grasp of universals; (iii) the operation of the agent intellect must be real. Fabro objected to Zabarella and Piccolomini, who did not accept the distinction between act and species, and who regarded the mind's first operation as "iudicium". According to Fabro, judgment presupposes the presence of something to judge about; hence, primary cognitive activ-

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<sup>198</sup> Philippus Fabro, *Philosophia naturalis Io. Duns Scoti. Ex quatuor libris Sententiarum, et Quodlibetis collecta*, Venetiis 1602 (first edition: Parma 1601).

<sup>199</sup> *Philosophia naturalis Io. Duns Scoti*, 510a: Fabro defined the intelligible species as "imago, idolum repraesentans obiectum intelligibile". On p. 497a, however, he considered it as "conceptus".

<sup>200</sup> *Philosophia naturalis Io. Duns Scoti*, 510a: "[Thomas] vult quod species ipsa sit forma intellecta, mediante qua intellectus intelligat."

<sup>201</sup> *Philosophia naturalis Io. Duns Scoti*, 510b-512a: (1) the intellect would always know; (2) the species would turn out to be the object of knowledge; (3) "nulla forma agit in suam materiam"; (4) there would be an intellectual memory, which is denied by Aristotle in *De memoria*; (5) the intellect is 'nothing' before it knows; (6) an illuminated phantasm is sufficient; (7) a form (the intellect) cannot receive accidents; (8) an eternal subject cannot receive accidents (cf. Achillini, in ch. VI, § 2.2, Nifo, in ch. VI, § 3.1.-2, Piccolomini, in ch. IX, § 1.3); (9) a superior being cannot be perfected by inferior beings; (10) the speculation of phantasms would become superfluous; (11) *Physica*, VII, 20 (see already Averroes, Burley's interpretation of the latter, and the controversies at the end of the 15th century in Padua); (12) the mind's first act would be reflexive (see Baconthorpe, in ch. IV, § 2.2); (13) species are superfluous, whether the intellectual act is active or passive; (14) the union with the object must be direct.



ity requires the presence of the object and, thus, of an intelligible species<sup>202</sup>.

Fabro believed that Scotistic cognitive psychology may successfully avoid the difficulties with which rival theories are faced, when they magnify either (as some Thomists are wont to) the role of the intelligible species, and thus that of the object and the phantasm, or the role of the intellect in the generation of knowledge (as Caietanus and Javelli did)<sup>203</sup>. The Thomists stressed the role of the species at the expense of the intellect, while Caietanus paid insufficient attention to the soul as “animalis vis”<sup>204</sup>. Scotus, by contrast, regarded the object and the intellect as co-responsible for the causation of the intellectual act, grounding their cooperation in the essential hierarchical order between them<sup>205</sup>. This led Fabro to give a prominent role to the agent intellect in the cognitive process—so prominent, in fact, that the agent intellect dominates the production of the intelligible species as well as that of the intellection. Thus, the contribution of the phantasm in the generation of knowledge was reduced to an “actio metaphorica”<sup>206</sup>.

### 2.2.2. Eustachius of Saint-Paul

Eustachius<sup>207</sup> was the first author to write a concise Scholastic manual of Peripatetic philosophy<sup>208</sup> that actually caught the ear of

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<sup>202</sup> *Philosophia naturalis Io. Duns Scoti*, 51515a-516b. For Zabarella's and Piccolomini's views on species, see ch. IX, § 1.1 and 3.

<sup>203</sup> *Philosophia naturalis Io. Duns Scoti*, 485b-491a.

<sup>204</sup> See also *Philosophia naturalis Io. Duns Scoti*, 501a, where Caietanus was attacked for having reduced the illumination by the agent intellect to a “fictitia”.

<sup>205</sup> *Philosophia naturalis Io. Duns Scoti*, 493b.

<sup>206</sup> *Philosophia naturalis Io. Duns Scoti*, 495a: “phantasma concurrebat ad producendum speciem intelligibilem agendo metaphoricè, & ita patet quomodo intellectio actualis producitur effectivè ab intellectu, & ab obiecto, ab intellectu realiter, ab obiecto metaphoricè sine per emanationem”. See also p. 496b, where Fabro maintained that Scotus attributed the production of the intellectual act to the agent and not to the possible intellect. Notice that Rubio defined the illumination of the phantasms as a ‘metaphorical’ action; see § 2.1.3.

<sup>207</sup> Eustachius a Sancto Paulo, 1573 Paris—1640; studied in Paris; 1602 prior; 1604 doctor theologiae; 1605 entered the Feuillants, Paris; professor at the Sorbonne.

<sup>208</sup> *Summa philosophiae quadripartita de rebus dialecticis, moralibus, physicis et metaphysicis*, Coloniae 1629 (first edition: Paris 1609).

a broad public with philosophical interests<sup>209</sup>. In the third part of his *Summa philosophiae*, dealing with natural philosophy, Eustachius discussed a number of issues pertaining to the psychology of cognition. One section of his treatise on the sensitive soul is devoted to the sensible species. This section requires our attention here because it may contribute to our understanding of the type of species theory that was later attacked by authors such as Descartes and Hobbes.

An intentional species is a formal sign originating from the sensible object and representing the latter in the senses<sup>210</sup>. Species are needed because: (1) a direct contact between the soul and the sensible object is impossible; (2) distant objects would be imperceptible; (3) experience confirms their existence (the stick under water seems broken, mirror images, memory)<sup>211</sup>. The sensible species are not conveyed to the soul “per transitionem”, as in a javelin, but “per continuam propagationem”, that is, as the heat of a fire reaches a distant object<sup>212</sup>. The species differ from the objects they represent, “realiter” (since they are received in different subjects) as well as “formaliter” (since the object is perceptible, whereas the species, as “ratio sentiendi”, is not). The species’ representational properties are due to a “stupendam conditionem”: although they inhere in a material substrate, the species are spiritual, and thus they may be functional in operations that transcend their sensible status. When they are received in the sense organ and in the senses, they “formaliter” determine the soul to perceive<sup>213</sup>.

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<sup>209</sup> It was praised by Descartes; cf. *Oeuvres*, AT III, 232-31. On Descartes and Eustachius, see F. Van de Pitte, “Some of Descartes’ debts to Eustachius a Sancto Paulo”, in *Monist* 71(1988), 487-497.

<sup>210</sup> *Summa philosophiae*, 218-219: “(...) signum aliquod formale rei sensibus objectae, sive qualitatem quamdam quae ab objecto immissa, & in sensu recepta vim habet ipsum objectum repraesentandi, licet ipsa sensu minime sit perceptibilis.”

<sup>211</sup> All these arguments had already been challenged during the Middle Ages by authors such as Aureol and Ockham; for discussion, see K.H. Tachau, *Vision and Certitude in the Age of Ockham. Optics, Epistemology and the Foundations of Semantics 1250-1345*, Leiden 1988, ch. IV-V.

<sup>212</sup> A similar view on the generation of sensible species was put forward by Demetrius Phalerus, *Tractatus de anima, seu Philosophia vera naturalis*, Romae 1663, 199.

<sup>213</sup> *Summa philosophiae*, 220-21.

It is not unreasonable to surmise that it was this sort of précis of the Scholastic doctrine of sensible species that led Descartes in his *Dioptric* to use the caricature of the 'little flying images' entering the immaterial soul from without<sup>214</sup>.

Elsewhere, Eustachius pressed the need of intelligible species as "principia intelligendi instrumentaria", which actualize the intellect "priusquam possit circa objectum operari"<sup>215</sup>. As formal principles, the intelligible species are the basis for the mind's first act<sup>216</sup>. Properly speaking, the knowing intellect is the possible intellect, because the informed mind normally leads to intellection. The agent intellect, by contrast, is nothing but an intermediary power, which produces the intelligible species, and which thus mediates between the phantasy and the possible intellect, purveying to the latter the contents for its second act: knowing<sup>217</sup>. Intellectual conceiving should therefore be seen as "actio", rather than as just the reception of intelligible species<sup>218</sup>.

The first object of the human mind is "ens quatenus intelligibile", that is, a material thing according to its "formalem rationem". Eustachius endorsed the traditional Aristotelian view of the mind's dependency on mental representations originating in the senses, but he did not rule out that knowledge without species is possible, too, namely, knowledge of spiritual entities. In that case, however, no "clarum & distinctum conceptum" is reached<sup>219</sup>.

<sup>214</sup> See ch. XI, § 1.1.2.

<sup>215</sup> *Summa philosophiae*, 276.

<sup>216</sup> *Summa philosophiae*, 276: "Actus autem per quem intrinsecè intellectus actuatur ac determinatur, est species intelligibilis, quae se habet in intellectu veluti formale principium."

<sup>217</sup> *Summa philosophiae*, 276-77: "sed esse vim quandam animae spiritualem mediam inter phantasiam & intellectum patientem, quae intellectioni exercenda subserviat, quaeque species intelligibiles ad intellectionem necessarias fabricet. (...) Dicimus igitur intellectum agentem concurrente simul phantasiam per suas imagines seu phantasmata corporea alias intellectuales imagines puriores et simpliciores elicere, easque simul intellectui imprimere." For the possible background of a similar view on the agent intellect, see Nifo (in his *De anima* commentary, examined in ch. VI, § 3.3) and Suarez's position, discussed in § 1.6.

<sup>218</sup> *Summa philosophiae*, 279: "sed esse actionem ab intelligendi facultate elicitam concurrente anima tamquam principaliori causa circa rem intelligibile." See also pp. 280-81, on the formation of the "verbum mentis", which is seen as coinciding with the intellection, and defined as "foetus ipsius intellectus". Also Suarez rejected the view of the intellection as a mere reception of species; cf. § 1.6.

<sup>219</sup> Cf. *Summa philosophiae*, pp. 271-73; see also p. 281.

The use of the expression “clear and distinct concepts” in this context, which we have also seen in Pallavicini and Rubio, invites us once more to reflect on the relation between late Scholastic psychology and the anti-Aristotelian psychology of Descartes. The seventeenth-century Scholastics thought that our mind cannot arrive at clear and distinct concepts unless it relates to sense-dependent representations. Descartes, by contrast, believed that clear and distinct ideas were of purely intramental provenance, being based on the completely sense-independent activity of the human mind.

### 2.2.3. Hieronymus Dandini

To the best of my knowledge, Dandini's<sup>220</sup> voluminous work *De corpore animato*<sup>221</sup> was one of the last thorough criticisms of the species doctrine to be composed from a Scholastic point of view. Dandini rejected not only the intelligible species but also the sensible species<sup>222</sup>. The senses are not moved by the objects by means of intentional forms, but by dint of real qualities<sup>223</sup>. Not much later a version of this view would be adopted by modern opponents of Aristotelian psychology<sup>224</sup>. Apparently, then, the overthrow of the physical theory underlying the Peripatetic framework

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<sup>220</sup> Hieronymus Dandinus, 1554 Cesena—1634 Forlì; he entered the Jesuit Order in 1569; taught theology at Padua; rector of various colleges of the order in North-Italy.

<sup>221</sup> Hieronymus Dandinus, *De corpore animato, Lib. VII, Lucentulus in Aristotelis tres de Anima libros, Commentarium peripateticum*, Parisiis 1611; this work counts 2302 cols. in folio.

<sup>222</sup> *De corpore animato*, 549: “Mihi quidem certè persuadet audiendos non esse illos, qui sensibilibus species ab obiectis in animam immitti praedicat, easque in memoriae thesauro conservatas memorandi principium esse.” See also cols. 1140-41, and 1153. Also the internal senses do not develop species; cf. col. 1637. Subsequently, Ponce would cast doubt on the need for species, regarding their superfluity as “probabilis”, and not as definitively established; see below § 3.5.1.

<sup>223</sup> *De corpore animato*, 1634: “sensus ab obiectis non per intentionales formas, ut plerique inquirunt Latinorum: sed per reales qualitates moveri.”

<sup>224</sup> Notice, however, that modern philosophers cast doubt on the objectivity of (secondary) perceptual qualities, such as light, color and sound, and analyze material reality in terms of space, motion, and matter. See ch. XI and XIII.

did not mean that all psychological ideas developed within that framework lost their significance<sup>225</sup>.

Dandini explicitly dissented from the Thomistic theory of abstraction. The notion of intelligible species is reasonable only when identified with the cognitive act<sup>226</sup>. The idea of a species distinct from the mental act is non-Aristotelian, and, as it turns out, it is redundant as far as the knowledge of singulars is concerned<sup>227</sup>. Knowledge is the bond of “intelligens” and “intellectum”. This presupposes an intimate connection between the notions of the mind and the intelligible forms of the world:

Nam si res quaeque in ipsius intellectus notionibus intelligantur, haec verè sint intellectiles rerum formae; quid alijs praeter has opus sit?<sup>228</sup>

The mind’s power to grasp objects lies in its ability to assimilate sensible reality at a mental level. Thus, all “accidentia spiritualia & intelligendorum obiectorum imagines”, which would purportedly precede the intellectual act, are obstacles one is better off without. Before presenting his own alternative to the species doctrine, Dandini pointed out that there are many differences of opinion among defenders of the species themselves<sup>229</sup>.

Dandini accepted the sense-dependency of intellectual knowledge. The cognitive object is present in the phantasms; by virtue of a “coordinatio facultatum”, the mind may be moved by sensory representations<sup>230</sup>. The phantasm does not impress anything on the

<sup>225</sup> In this context, see also the later re-interpretation of the doctrine of sensible species in a Cartesian sense by authors such as Louis de la Forge and Emanuel Maignan. cf. ch. XIII, § 2.2, and XIV, § 1.

<sup>226</sup> *De corpore animato*, 1892: “A quibus [sc. Thomas et alii] ego multis modis dissentio. Primum intellectilem speciem nil aliud esse arbitror, quam ipsam intellectionem, quam actu promit intellectus, phantasmatis inspectis; ut pluribus post dicebo.” This view was already present in many medieval Scholastics (Godfrey of Fontaines, Radulphus Brito) and in various Renaissance authors (Nifo, Zabarella).

<sup>227</sup> *De corpore animato*, 1892, 1902-3, and 1983.

<sup>228</sup> *De corpore animato*, 1930-31.

<sup>229</sup> Thomas, Albert and Giles thought that they are functional in all knowledge; Scotus theorized their need for the knowledge of universals, while Gregory restricted their role to abstractive knowledge; cf. *De corpore animato*, 1981.

<sup>230</sup> *De corpore animato*, 1982: “Quare ut intellectus est naturaliter coordinatus phantasiae, sit phantasma illius optimè comparatum ad movendum intellectum; quique hoc neget, coordinationem facultatum harum negabit.” The aforemen-

intellect, however. Indeed, if a transfer of accidents were accepted, one would fall into the trap of the species doctrine. Intellectual knowledge coincides with the actual representation of an intelligible form by the mind:

Itaque cū intellectum Aristoteles formarum locum appellavit atque in anima dixit non lapidem, sed lapidis formam inesse; intellectilem formam significavit, non ab intellectili obiecto in intellectum impressam; sed intellectionem ipsam aut actu aut habitu, velut intellecti obiecti formam & similitudinem ab intellectu circa obiectum in phantasmate repraesentatum expressam.<sup>231</sup>

As had also been claimed by others such as Ockham, the human mind has an inborn capacity to access its objects directly. Thus, in actual knowledge there is no distinction between act, content and representation. All natural things have a 'double' form: they are simple insofar as they exist "extra animam", and they are "intellectilis" insofar as they are grasped by the mind, and coincide with its "comprehensio & intellectio"<sup>232</sup>.

#### 2.2.4. Pedro Hurtado de Mendoza

Hurtado de Mendoza<sup>233</sup> was a typical exponent of the syncretism dominant in later Scholastic philosophy. As Caruso has observed, he read Thomas through nominalist glasses<sup>234</sup>. It is not surprising to find that this strategy led to a somewhat ambiguous position, certainly with regard to the doctrine of species. Hurtado was critical of the species doctrine, yet without rejecting it. He ended up with a position in the style of Avicenna, such that the human mind receives the intelligible species from God.

Like others before him, Hurtado preferred to look upon the species as "repraesentatio virtualis obiecti" rather than as "formal"

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tioned "coordinatio facultatum" is similar to Olivi's and Suarez's notion of a "colligantia" or "sympathia" between perceptual and intellective faculties.

<sup>231</sup> *De corpore animato*, 1985.

<sup>232</sup> *De corpore animato*, 1988.

<sup>233</sup> Petrus Hurtado de Mendoza, Valmaseda 1578—1657; 1595, joined the Jesuit Order; taught philosophy in Pamplona, and theology in Valladolid and Salamanca. For discussion, see E. Caruso, *Pedro Hurtado de Mendoza e la rinascita del nominalismo nella Scolastica del Seicento*, Firenze 1979.

<sup>234</sup> Caruso, *Pedro Hurtado de Mendoza*, 79-80; cf. also p. 9: Hurtado was attacked by Thomists such as Compton Carleton, but also by Franciscans such as Ponce and Mastrius.

representation<sup>235</sup>. With the species lacking formal reality, their causal import in the process of knowledge cannot be explained in any satisfactory manner<sup>236</sup>. Not all types of knowledge require species, but only knowledge of objects that are not proportionate to the intellect<sup>237</sup>. This means that species have a crucial role to play in our knowledge of sensible reality.

Hurtado accepted the species both at the sensitive and at the intellectual level. They figure even in the intuition<sup>238</sup>. The need for spiritual species was argued in a cursory way<sup>239</sup>. The external senses acquire species from the environment and transmit them to the inner senses. It cannot be denied that knowledge depends on these species, which are sensibly impressed and which represent their object virtually: experience teaches us that thinking may be tiresome, hence, that intellectual acts are conditioned by “spiritus vitales & animales”<sup>240</sup>. Elsewhere, however, Hurtado gave a Platonicizing twist to the representational features of the sensible species: the sensibly impressed species conveys only an “adumbrata imago”, as distinct from the “prototypus” grasped by the mind<sup>241</sup>.

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<sup>235</sup> *Disputationes de Universa philosophia*, Lugduni 1617, 792: the ‘formal’ representation is defined as the result of the cognitive act. On p. 778, Hurtado defined knowledge as “perceptio, seu repraesentatio obiecti”. For discussion, see Caruso, *Pedro Hurtado de Mendoza*, 59-60.

<sup>236</sup> *Disputationes de Universa philosophia*, 885-86. Cf., inter alia, Rubio, *Commentarii in de Anima*, 683.

<sup>237</sup> *Disputationes de Universa philosophia*, 886-87: “Confirmatur, praesente obiecto, & proportionato non requiritur species: ut ad visionem Dei, & cognitionem Angeli de se: ergo quia obiectum concurrat activè, alioquin necessaria esset species, est autem proprium causae activae petere applicationem ad subiectum.” See also p. 876: “(...) ad primam cognitionem intellectualem insensibilis obiecti, non datur species propria.”

<sup>238</sup> See *Disputationes de Universa philosophia*, 850, where intuition was defined as “cognitio, quae immediatè fertur in obiectum per propriam speciem”. This description reveals that Hurtado was influenced by the views of moderate nominalists such as Gregory of Rimini. For discussion of this aspect, see Caruso, *Pedro Hurtado de Mendoza*, 66.

<sup>239</sup> *Disputationes de Universa philosophia*, 874: (1) Augustine’s dictum that “ab obiecto & potentia paritur notitia”; (2) the intellect is indifferent to the objects, and needs to be determined; (3) the knowledge of many things does not depend directly on the phantasy.

<sup>240</sup> *Disputationes de Universa philosophia*, 890. For the role of these ‘spirits’ in perception and cognition, see also Suarez, *De anima*, 616b. See also the role of the animal spirits in Descartes, Hobbes and Gassendi on the physiology of perception, examined in the next chapter.

<sup>241</sup> *Disputationes de Universa philosophia*, 792.

The contribution of the phantasms in the generation of the intelligible species was described in purely Avicennian terms:

Ita intellectus noster tactus phantasmate accipit species à Deo supplente absentiam obiectorum, phantasmate concurrente, vel dispositivè, vel instrumentaliter etiam loco obiecti.<sup>242</sup>

Hurtado turned to Ockham and Durandus in support of this peculiar view<sup>243</sup>, but its spiritual background (apart from Avicenna) would rather seem to be the psychology of Suarez. Indeed, the type of generation of species as proposed by Hurtado is based on a "sympathia" between the inner senses and the intellect, and it comes in the place of the Thomistic abstraction<sup>244</sup>. The causal responsibility for mental representation now comes to rest basically with God and with the phantasms<sup>245</sup>. It is this peculiar form of co-operation that enables our grasp of particular sensible things<sup>246</sup>.

### 2.2.5. Raphael Aversa

Aversa's<sup>247</sup> position in cognitive psychology was a rather orthodox one. He defended the distinction between act and species in intellectual cognition, arguing that the species, produced by the agent intellect, cause acts, and remain after the intellection<sup>248</sup>.

The human cognitive power possesses no innate species, nor is it able to produce its own act. Furthermore, sensible things as such cannot move the intellectual soul, nor can the senses present to the

<sup>242</sup> *Disputationes de Universa philosophia*, 764.

<sup>243</sup> See *Disputationes de Universa philosophia*, 765.

<sup>244</sup> *Disputationes de Universa philosophia*, 800: "Per cognitionem sensus communis intellectus agens naturali quadam sympathia excitatus efficit speciem spirituales (quod vocant abstrahere à phantasmatis) vel potius (ut dixi disput. 5) à Deo accipit eas."

<sup>245</sup> *Disputationes de Universa philosophia*, 890: "(...) intellectus autem, aut Deus simul cum phantasmate est causa efficiens specierum".

<sup>246</sup> The species regard particular things; cf. *Disputationes de Universa philosophia*, 875.

<sup>247</sup> Raphael Aversa, 1589 Sanseverino (Salerno)—1657 Rome; professor of theology, Rome; 1623 rector of the college of the Order (CC.RR.MM.).

<sup>248</sup> *Philosophia metaphysicam physicamque complectens quaestionibus contexta*, Romae 1625-27, vol. II, 803b-804a. Like Suarez and other authors discussed above, Aversa considered the production of the intelligible species as the agent intellect's central operation, to which other activities may be reduced; cf. p. 824a-826a.



mind a proportionate object<sup>249</sup>. Thus, intelligible species are needed to ground the assimilation between the mind and its object, and to explain both the “subjective” presence of cognition and the “objective” presence of the object in the mind<sup>250</sup>.

Aversa gave a convincing refutation of Durandus’ argument against intelligible species. Durandus had claimed that any possible role of the species in the process of cognition hinged on its being known before the object<sup>251</sup>. According to Aversa this argument is flawed because the species do not represent their corresponding objects in any “objective” way, but only *effectivè*<sup>252</sup>. Aversa emphasized the fact that species serve as *un-known* principles in the generation of intellective cognition, thus envisaging a robustly non-circular explanation of knowledge acquisition.

#### 2.2.6. Fortunio Liceti

The monograph *De intellectu agente* by the Italian Franciscan Liceti reviewed at some length the noetics of traditional Aristotelianism<sup>253</sup>. The first book discussed the views of a large number of earlier writers who had been critical of the idea of an active mind, including Isaac Narbonensis (known from Pico’s *Conclusiones*), Durandus, Scaliger, Toletus, and Guevara. From the thorough refutation of Durandus, which takes up more than ten pages folio, we can make up that Liceti wanted to defend a (slightly confusing) double operation of the agent intellect with regard to the phantasms: it extracts from their passive potency the capacity to move the possible intellect, and impresses this same ca-

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<sup>249</sup> *Philosophia metaphysicam physicamque*, 818a-820a.

<sup>250</sup> *Philosophia metaphysicam physicamque*, 805a-806a. For a similar use of the ‘subjective-objective’ distinction, see James of Piacenza (ch. IV, § 4.6) and Marcantonio Zimara, discussed in ch. VII, § 1.2.

<sup>251</sup> See ch. IV, § 2.1.

<sup>252</sup> *Philosophia metaphysicam physicamque*, 820a.

<sup>253</sup> Fortunius Licetus, 1577 Rapallo—1657 Padua; studied philosophy in Bologna; 1600 doctor philosophiae et medicinae, Genua; 1600-1609 taught logic and physics, Pisa; professor of philosophy in Padua (1609-1636), Bologna (1636-1645), and theoretical medicine from 1645 again in Padua; he published extensively on philosophy, psychology, physics, medicine and astronomy. For discussion, see, among others, Garin, *Storia della filosofia italiana*, vol. II, 562. Liceti is cited by Gassendi, in *Syntagma philosophicum, Opera*, vol. II, 256B.

capacity on the actual essence of sensory representations<sup>254</sup>. In the course of the first book, Liceti frequently insisted that intelligible species must precede the intellectual act<sup>255</sup>.

The second book discussed various opinions about the nature of the agent intellect, while book IV distinguished and discussed twenty-three functions attributed to it by ancient, medieval and contemporary authors<sup>256</sup>. None of these Liceti accepted without qualification<sup>257</sup>. It is not before the very last book, after yet another lengthy survey of traditional opinions concerning the properties of the agent intellect, that Liceti finally presented his own view of the matter.

At the outset of Book V, Liceti individuated four operations of the active mind: (1) the production of an image representing the particular essence to the possible intellect; (2) the creation of a species representing the incomplex universal nature; (3) the generation of a species that lays the basis for the possible mind's propositional thought; (4) the causation of a species that grounds syllogistic reasoning<sup>258</sup>. The majority of Liceti's contemporaries and immediate predecessors assigned to the agent intellect only the first type of operation, relegating to the competence of the possible intellect the grasp of the universal and the capacity for syllogistic reasoning<sup>259</sup>. In Liceti's purview, however, the agent intellect lays the basis for the entire range of cognitive activities, and thus comes to play a primary, not to say totalitarian, role in the economy of knowledge<sup>260</sup>. Since the human mind is unable to make direct contact with external, sensible reality, a chain of (multiplied) species is required. The continuity in this chain is

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<sup>254</sup> *De intellectu agente*, libri V, Patavii 1627, 9a. This view does not fit in with the subsequently developed theory about the fourfold operation of the agent intellect; see below.

<sup>255</sup> *De intellectu agente*, 5b, 30b

<sup>256</sup> Liceti examined the positions of Theophrastus, Averroes, Alexander, Themistius, Albert the Great, Paul of Venice, Jandun, Dandinus, Henry of Ghent, Priscianus, Thomas, Baconthorpe; moreover, he also cited Lucretius and Fernel.

<sup>257</sup> *De intellectu agente*, 168b: "De functionibus igitur intellectus agentis nihil a viris praestantibus hactenus habere potuimus, in quo mens Peripatetici prorsum quiescere valeat."

<sup>258</sup> *De intellectu agente*, 305b.

<sup>259</sup> See, among others, Suarez (§ 1.6) and Zabarella (ch. IX, § 1.1).

<sup>260</sup> For the prominent position of the agent intellect, see already *De intellectu agente*, 32a.

guaranteed by the agent intellect, which by producing the intelligible species bridges the gap between the organic and the spiritual world<sup>261</sup>. This production was sometimes defined “metaphorice” in terms of abstraction or purification, but properly speaking it consists in a “generatio simulacri actu intelligibilis”<sup>262</sup>.

Liceti’s analysis of the nature and function of the agent intellect was marked by a strongly syncretizing tendency. His terminology betrayed undeniably Platonic influences (“simulacrum”, “mens”). The bulk of his speculations were genuinely Peripatetic, however. The human mind engenders knowledge by actively interacting with sensible reality, processing sensory representations. As far as the topic of species is concerned, the value of this work does not lie in anything like the originality of his position (which was virtually nonexistent<sup>263</sup>), but rather in the fact that he served as a barometer for the state of Peripatetic cognitive psychology at that time. Aimed at an extensive but often sterile confrontation with its sources, it no longer succeeded in devising fresh insights or new methods and approaches for tackling in a novel way the central questions handed down by tradition.

### 2.2.7. Castelvì and Cottunius

Hurtado’s hesitations on certain points in the species doctrine were critically examined by the Spanish Carmelite Castelvì<sup>264</sup> in his manual of Peripatetic natural philosophy. Castelvì defended the need for intelligible species and the active cooperation of the agent intellect in their production<sup>265</sup>. He rejected Hurtado’s view of the

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<sup>261</sup> *De intellectu agente*, 307a: “Quare intellectus agens requiritur inorganicus, & immaterialis, qui simulacrum rei singularis in organo phantasiae constitutum gubernet, atque attollat, subleuetque ad generationem consimilis imaginis in substantia inorganica, & immateriali mentis nostrae possibilis.” For the preliminary elaborating of the phantasms, see *De intellectu agente*, 9a, referred to above.

<sup>262</sup> *De intellectu agente*, 307a.

<sup>263</sup> The only exception is the rather enigmatic view of the production of species representing judgments and syllogisms.

<sup>264</sup> Julianus de Castelvì, † 1637 Valencia; from Valencia, where he entered the Carmelite Order, and taught philosophy and theology at the university.

<sup>265</sup> *In Aristotelis libros de coelo, generatione, corruptione, et anima*, Valentie 1627, 359a-360b. According to Castelvì, in Hurtado the agent intellect’s operation is restricted to the production of the cognitive act.

species as being received from God, which he regarded as bad philosophy. Against Hurtado's speculations on divine intervention, he defended a view of intellectual knowledge as being strictly sense-dependent. He assigned to the phantasm (enabled, that is, 'elevated' by the agent intellect) the production of a species of the object in the intellect. The intelligible species must be produced by the object, which is here represented by the sensory image, because only the object can give the required "formalitatem"<sup>266</sup>. Depending directly upon the phantasm, the object first known by the intellect must be the "accidens singulare sensibile". Knowledge of substances is acquired by the mind by means of deduction<sup>267</sup>.

Cottunius<sup>268</sup> wrote a general treatise on rational psychology, in which he explained the doctrine of species along Thomistic lines, arguing that the operation of the agent intellect is one, and polemizing with Durandus<sup>269</sup>.

### § 3. JOHN OF SAINT-THOMAS AND HIS CONTEMPORARIES

In this section I discuss the psychology of the last generation of seventeenth-century schoolmen that was unacquainted with the new philosophy. Although later schoolmen would generally ignore the philosophies of Descartes, Hobbes and Gassendi, they were as a rule not unfamiliar with their work, and sometimes even explicitly reacted to it.

#### 3.1. *Rodrigo Arriaga*

Arriaga's<sup>270</sup> cognitive psychology is important for its criticism of the circular fallacy in the theory of knowledge acquisition.

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<sup>266</sup> In *Aristotelis libros (...) de anima*, 361a-62a.

<sup>267</sup> In *Aristotelis libros (...) de anima*, 370a; cf. 364a-365b.

<sup>268</sup> Johannes Cottunius, 1577 Veria—1658 Padua; studied philosophy, theology and medicine; taught Greek (from 1617) and philosophy (from 1630) in Bologna; from 1632 professor of philosophy in Padua.

<sup>269</sup> See *De triplici statu animae rationalis*, Bononiae 1628, 130-133 (based upon *Summa theologiae*, I, q. 84), and 327-331.

<sup>270</sup> Rodericus de Arriaga, 1592 Logroño—1667 Prague; 1606 entered the Jesuit Order; studied and taught philosophy and theology in Valladolid; 1624-25 in Salamanca before leaving to Prague, where he would teach theology. For a general discussion, see: Caruso, *Pedro Hurtado de Mendoza*, 81-84; B. Jansen,

Arriaga distinguished between two broad types of mental activity, which he designated as the two “lives” of the intellect. First there is the “physical” life, which does not refer to the intellect’s dealings with the sensible world (as might have been expected), but to its immanent activity as an immaterial form<sup>271</sup>. Secondly, the intellect in its “intentional” life is directed towards external objects as possible objects of cognition<sup>272</sup>. Intellectual conceiving should not be seen as “vivere physicè”, but rather as the expression of an object that is present at the mental level by dint of an informing quality, namely, the intelligible species<sup>273</sup>. Originating from the perceptual faculties, this species makes an effective contribution to the generation of intellectual knowledge<sup>274</sup>. Arriaga was convinced that the only way to avoid a “petitio principii” in explaining knowledge is to allow the inferior (perceptual) capacities to influence the superior (cognitive) ones<sup>275</sup>.

Speaking in general terms, an impressed species is a quality produced by the object, which goes proxy for the object and con-

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“Die scholastische Psychologie vom 16. bis 18. Jahrhundert”, in *Scholastik* 26(1951), 342-363, on 352; K. Eschweiler, “Roderigo de Arriaga S.J.”, in *Spanische Forschungen der Görresgesellschaft* 3(1931), 253-286; L. Thomdyke, “The cursus philosophicus before Descartes”, in *Archives internationales d’Histoire de la Science* 4(1951), 16-24, on p. 19f. According to Ferrater Mora, “Suarez and modern philosophy”, 538, Arriaga, who for many years taught at Prague, formed a possible link between Suarez and Leibniz.

<sup>271</sup> Cf., in this context, the ‘material’ existence of ideas as mental acts in Descartes; see ch. XI, § 1.2.1-2.

<sup>272</sup> Rodericus de Arriaga, *Cursus philosophicus*, Antverpiae 1632, 727b-728a: “Fateor, in intellectu coincidere de facto duas vitas, & intentionalem & physicam, prout communiter explicatur vita physica, quia & est intellectivus, & operativus immanenter ab intrinseco: verum illae duae vitae formaliter non sunt idem inter se, unde bene potest reduci ad actum secundum una sine alia, & consequenter poterit rectè actu intelligere & vivere intentionaliter, quin actu operetur & vivat physicè.”

<sup>273</sup> *Cursus philosophicus*, 730b. See also p. 732b, where Arriaga distinguished between intelligible species and “verbum mentis”, and defined the latter as expression of an object: “Ex dictis à nobis constat, quando quis intelligit, de facto dari duo, & qualitatem unitam, quae est expressio obiecti, & in quâ formaliter consistit adequatè ratio intellectionis; & etiam actionem quâ illa cognitio seu qualitas producitur a nobis.” Also Leibniz would define human perception and knowledge in general as expression. For the possible relations between Arriaga and Leibniz, see Ferrater Mora, “Suarez and modern philosophy”, 538.

<sup>274</sup> See *Cursus philosophicus*, 711a; Arriaga emphasized the fact that species exercise an “effective” causality in the generation of knowledge, not a formal one.

<sup>275</sup> *Cursus philosophicus*, 686a.

tributes to our knowledge of it<sup>276</sup>. There are species for each of the external and internal senses, and at an intellectual level they are the “*causa principalis cognitionis*”<sup>277</sup>. Their need can only be established on empirical grounds; according to Arriaga, no *a priori* proof of their necessity can be given<sup>278</sup>. It is true that knowledge as such is more perfect than the species on which it depends, but for Arriaga this is a methodological requirement of psychology, not an argument against the theory of species. Our understanding of knowledge must ultimately rest on unintelligent faculties and unknown entities. Indeed, it is impossible to understand knowledge in terms of a direct representation of objects without committing the fallacy of circular reasoning<sup>279</sup>. Moreover, the embodied soul cannot display its intellectual capacities without using the phantasy and its representations<sup>280</sup>.

The intelligible species may be seen as “*primus actus intellectionis*”<sup>281</sup>. But what exactly is the species’ relation to the object it represents? Arriaga rejected several traditional answers to this question. The species is not identical with the object *qua* specific nature, for that would entail a formal identity between them. Nor should the species be seen as an “*idolum*”, for then it would end up being an object of knowledge itself<sup>282</sup>. For this reason Arriaga rejected Capreolus’ definition of the species as “*formalis similitudo & imago obiecti*”<sup>283</sup>. Arriaga’s own solution was given only in the most general of terms, and it strikes one as vague and rather unsatisfactory: the species, going proxy for the object, contains the

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<sup>276</sup> *Cursus philosophicus*, 673.

<sup>277</sup> See *Cursus philosophicus*, 673b-685a and 686a, respectively.

<sup>278</sup> See *Cursus philosophicus*, 699a.

<sup>279</sup> See also *Cursus philosophicus*, 696b-697a: “*Aliqui recentiores accuratè rem examinare cupientes, dicunt, cognitionem esse repraesentationem expressam, & imaginem obiecti: atqui imago debet oriri ab eo cuius est imago, ergo cognitio debet oriri ab obiecto. (...) probant enim, cognitionem debere oriri ab obiecto, quia est imago illius; eam autem esse imaginem non aliter probant, quàm petit procedere ab obiecto.*”

<sup>280</sup> *Cursus philosophicus*, 686a.

<sup>281</sup> *Cursus philosophicus*, 687a.

<sup>282</sup> *Cursus philosophicus*, 691a-692a.

<sup>283</sup> *Cursus philosophicus*, 695b: three interpretations of the similitude marking the species are rejected: (1) completely “*similis*” (it would be identical to the object); (2) physical (it would be insufficient to represent the object to the mind); (3) intentional (it would be knowledge). See also below.

object's formal aspects "quasi in semine"<sup>284</sup>. It is important to bear in mind here, however, that Arriaga subsequently wanted to identify the species as a functional element in a non-intelligent structure on which cognitive operations are based. The species is a *virtual* representation, that is, it contributes to the generation of knowledge as an efficient cause. Conversely, if it were to represent the object 'formally', then it would inevitably become knowledge itself<sup>285</sup>.

Arriaga emphasized the fact that the mind is dependent on representations which, originating from the perceptual faculties, ground our knowledge of the sensible world. He was convinced that the role of species cannot be denied without begging the question of knowledge acquisition. As a consequence, the need for species can only be established *a posteriori*, and the nature of their relation to the object represented can only be described in the vaguest of terms.

### 3.2. John of Saint-Thomas

The *Cursus philosophicus*<sup>286</sup> by John of Saint-Thomas<sup>287</sup> was one of the main philosophical textbooks to be written during the Second Scholasticism. It marked the return to a more genuine

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<sup>284</sup> See *Cursus philosophicus*, 699a. Also other authors used the metaphor of the 'seed'; see Martínez (§ 1.2), Suárez (§ 1.6), Murcia de la Llana (§ 2.1.1), the College of Alcalá (§ 3.3), and Gabriel of Saint-Vincent (§ 3.5.3).

<sup>285</sup> *Cursus philosophicus*, 711a-b; cf. p. 712b: "(...) at species, quae non est formalis & expressa obiecti imago & repraesentatio, sed tantum virtualis, non potest per seipsam formaliter determinare, sed concurrando efficienter ad cognitionem."

<sup>286</sup> Ioannes a Sancto Thoma O.P., *Cursus philosophicus thomisticus secundum exactam, veram, genuinam Aristotelis et Doctoris Angelici mentem*, nova editio B. Reiser, 3 vols., Taurini 1930-37.

<sup>287</sup> Johannes a Sancto Thoma, 1589 Lisbon—1644 Fraga; studied humanities and philosophy in Coimbra; studied theology in Louvain from 1606; joined the Dominicans in 1609; taught arts and theology in Madrid, Placencia, and Alcalá. For a brief sketch of his psychological views, see Kessler, "The intellectual soul", 508-509. See also Caruso, *Pedro Hurtado de Mendoza*, 90-93 and E. Wolicka, "The notion of truth in the epistemology of John of Saint Thomas", in *New Scholasticism* 53(1979), 96-106. For the chronology of John's works, see J. Maritain, "Jean de Saint-Thomas", in *Angelicum* 66(1989), 12-20.

form of Thomistic philosophy<sup>288</sup>. In the fourth part of this course, entitled *De ente mobili animato*<sup>289</sup>, John addressed a number of issues pertaining to the topic of our study. His defence of the sensible species, like that of Eustachius, is worthwhile here for a number of reasons. First of all, it is interesting to set John's views alongside those of contemporary critics of the species such as Descartes and Hobbes. Secondly, it is not inconceivable that his interpretation of Peripatetic perceptual psychology has influenced later opponents of the species<sup>290</sup>.

John began his discussion of sensible species by listing a number of difficulties in connection with (1) their relation to the object (if they are "dissimiles" with the object, they cannot represent it, but if they are "similes", they are redundant); (2) their manner of informing (as unknown entities), and their union (substantial or accidental) with the perceptual power; (3) their nature (neither substance nor accident); (4) how they are caused; (5) the type of causality exercised by them; (6) the fact that they may represent only present objects; (7) their apparent redundancy in the case of certain senses (as in touch, for example)<sup>291</sup>. On the credit side of the species, John noted that they were supported by a number of authoritative writers, including Aristotle, Thomas, Dionysius (*sic*), Augustine, and Anselm. Furthermore, their existence is confirmed by experience (echoes and mirror images), and can also be established on rational grounds: all potential entities need external stimuli in order to be actualized<sup>292</sup>. In point of fact, John explicitly based his view of the sensible species on the act-potency scheme of Aristotelian physics. As is well-known, the destruction of that scheme would be an important motive for Descartes and Hobbes to

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<sup>288</sup> As, for example, the real distinction between agent and possible intellect (see below) and the priority of universal knowledge over the mind's cognition of particulars; cf. *Cursus philosophicus thomisticus*, vol. III, 324a-334a.

<sup>289</sup> This work was first published in Alcalá 1635; it was later integrated in the *Cursus*.

<sup>290</sup> As pointed out in the Introduction to this Part, the attack on the species doctrine by modern philosophers generally concentrated on their role in perception. Then, by extension, they were also excluded from the realm of intellectual cognition. This applies to Descartes and Hobbes, but no less to Malebranche and Leibniz. See ch. XI and XIII.

<sup>291</sup> *Cursus philosophicus thomisticus*, tomus III, 177b-180b.

<sup>292</sup> *Cursus philosophicus thomisticus*, 180b-182b.



reject the species. However, in the next chapter we shall see that the alternatives developed by these authors, in spite of their many differences, owed some of their specific characteristics precisely to the polemics with Aristotelian psychology. Examples are Descartes' dispositional innatism and Gassendi's psychology of cognition<sup>293</sup>.

Like most of the later schoolmen, John of Saint Thomas discussed the intelligible species in the context of the relation between agent intellect and sensory representations. The agent intellect produces the intelligible species that are to be impressed on the possible intellect. Though the agent intellect is not separate, it may be said to participate in God<sup>294</sup>. Against Suarez, John held the agent intellect to be really distinct from the possible intellect, because it is impossible that the same power first produces species without knowing them, and then knows the object represented by these species<sup>295</sup>.

With regard to abstracted intelligible species, John noted the following problem: if the species are spiritual only "in repraesentando" and not "in entitate", then it might easily be inferred that their cognitive function can just as well be performed by the phantasms. The inference is illicit, however: no illuminated sensory representation can replace the intelligible species, for what is actually material and sensible can never become actually intelligible without being transformed:

Ergo restat, quod intelligibilitas in actu et immaterialitas obiecti primo et per se reluceat in ipsa specie formata ab intellectu agente, quatenus modo immateriali et abstracto repraesentat quidditatem rei sine singularitate.<sup>296</sup>

Thus, only the intelligible species, as a product of the active mind, can explain our grasp of the cognitive object as such.

What still needs to be explained, now, is the type of illumination the agent intellect is supposed to impose on the phantasms and on the possible intellect. John gave the following

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<sup>293</sup> See ch. XI, § 1.2.4, and § 3.

<sup>294</sup> John quoted Psalm 4: "Signatum est super nos lumen vultus tui, Domine".

<sup>295</sup> *Cursus philosophicus thomisticus*, 299b-299b. See also pp. 302b-303b, for the refutation of Suarez's arguments.

<sup>296</sup> *Cursus philosophicus thomisticus*, 304b-305a.

survey of extant opinions on this matter. (i) Suarez denied that the active mind can have any kind of efficient causality with respect to the phantasms, which exercise a merely material causality; (ii) Thomists attributed a form of instrumental causality to the phantasms<sup>297</sup>; (iii) Caietan's theory of objective illumination; (iv) the theory of a "virtus spiritualis" which, originating from the agent intellect, penetrates the sensory images<sup>298</sup>; (v) the theory of the 'radical' illumination, attributed here to Ferrara; (vi) through illumination the phantasms acquire the status of "instrumentum elevatum"—a view ascribed to the Coimbra College and to Rubio<sup>299</sup>. Of these opinions, John explicitly rejected only the theory of 'radical' illumination and the views of Caietan and Suarez. Regarding radical illumination he observed that the phantasy and its act do not acquire any immateriality by virtue of the fact that they belong to the same soul as the intellect. As for Caietan, the external assistance hypothesized by him does not result in any kind of substantive transformation. Finally, Suarez was unable to explain the "concursus materiae", because his theory ruled that out<sup>300</sup>. When it comes to John's own view of the problem, the conclusion turns out to be rather thin:

Illuminatio autem phantasmatum non ponitur a D. Thoma in eo, quod aliqua lux vel perfectio immaterialis ponatur in phantasmatibus, sed solum quod reddantur habilia, ut ex eis abstrahantur species, quae habilitas non est aliquid radicale in phantasmatibus (...).<sup>301</sup>

Thus, the agent intellect's central operation is that of producing the intelligible species; all other operations are but aspects of this production<sup>302</sup>. Sensory representations are processed by the active mind to form cognitive representations, rather than to enable the first to move the possible intellect. The fact itself that physiologi-

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<sup>297</sup> As a matter of fact, it was rather Duns Scotus who put the phantasm's impact in these terms; cf. ch. IV, § 1.1.

<sup>298</sup> As we have seen in ch. VII, § 2.2, this opinion was defended by Sylvester of Ferrara, who appealed to Thomas, *Summa contra Gentiles*, II, c. 77.

<sup>299</sup> *Cursus philosophicus thomisticus*, 305a-306a.

<sup>300</sup> *Cursus philosophicus thomisticus*, 306b-307b.

<sup>301</sup> *Cursus philosophicus thomisticus*, 309b.

<sup>302</sup> See also *Cursus philosophicus thomisticus*, 311a. See already other authors, including Rubio, Suarez, and Goes.

cally embedded representations can be mentally processed is grounded in the body's being subordinate to the spirit:

Quare operatio phantasmatis ad producendam speciem intelligibilem debet esse ex virtute per modum motionis ab intellectu agente, qui est spiritualis. Et talis virtus spiritualis, quae datur per modum motionis seu per modum transeuntis non repugnat subiectari et inhaerere in re corporea, quatenus corpus est obediens spiritui et subordinatum ipsi.<sup>303</sup>

The nature of the "virtus spiritualis" conferred on the phantasm by the agent intellect remains a problem, however. The phantasm cannot receive any uncorporeal light. (This would in fact contradict Aristotelian physics.) Indeed, the "motion" or spiritual virtue cannot be called spiritual in the proper sense of the word, but only "reductive"<sup>304</sup>. Thus, while the operation of the agent intellect with regard to the phantasms is well-defined in its *functional* aspects (processing sensory images in order to produce mental representations), its *ontological* aspects are left in the dark (a 'reductive' spirituality being conferred to the phantasms). It is interesting to note that John described the operation of the agent intellect in terms of "motio". This suggests that the agents functional in the generation of knowledge were seen by him as natural substructures, hence as non-intelligent. The notion of motion would also play a key role in the modern, anti-Aristotelian psychology of authors such as Hobbes and Descartes. However, they used the term only in the sense of local motion, and not in the metaphorical sense employed by John of Saint-Thomas. Motion in Hobbes would dominate the entire cognitive process, while Descartes would restrict its role to the field of physiological preliminaries to mental perception.

### 3.3. *The College of Alcalá*

Also the exposition on *De anima* composed at the Carmelite college of Alcalá took Thomas as its explicit point of departure<sup>305</sup>.

<sup>303</sup> *Cursus philosophicus thomisticus*, 312b.

<sup>304</sup> *Cursus philosophicus thomisticus*, 313a.

<sup>305</sup> Collegium Complutense (Discalceatorum Fratrum ordinis B. Mariae de Monte Carmeli), *Disputationes in tres libros Aristotelis de anima. Iuxta miram Angelici Doctoris D. Thomae, & Scholae eius doctrinam*, Lugduni 1637. This *De*

The Thomism espoused therein, backed up by an impressive erudition, expressed itself *inter alia* in the denial of direct knowledge of particulars, the real distinction between agent and possible intellect, and the definition of intelligible species as formal representation<sup>306</sup>.

Intelligible species are needed because the intellect, although in itself a natural act, is potential in the intentional order, that is, with respect to its possible objects. Moreover, the cognitive powers necessarily operate in both the natural and in the intentional realm at the same time, and this simultaneous operation requires that the human mind be actualized by an intelligible form<sup>307</sup>. The intellect, which is in itself "indifferens", must be determined with regard to a specific object, in other words, it must be 'fertilized'<sup>308</sup>. The distinction between the natural and the intentional realm also appeared elsewhere in the same work, namely, where the author remarked that species do not inhere in the intellect as "subiectum"; the unity of intellect and representation is "secundum quid", that is to say, they are one "in esse cognoscibili"<sup>309</sup>.

In contrast to the majority of psychological theorists at that time, the Alcalá college saw the intelligible species as a "formal"

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*anima* commentary was composed by Antonius a Matre Dei; cf. B. Jansen, "Zur Phänomenologie der Philosophie der Thomisten des 17. und 18. Jahrhunderts", in *Scholastik* 13(1938), 49-71. On the anti-nominalist turn of the 4th edition, cf. Caruso, *Pedro Hurtado de Mendoza*, 97, who observes that this edition is critical about authors such as Arriaga, Hurtado, Oviedo, and De Quiros.

<sup>306</sup> See, respectively, *Disputationes in tres libros Aristotelis de anima*, 479b-489b, 501a-506b, and 461a. Notice that the author also invoked Ficino's authority (*Theologia platonica*, XV) for the real distinction between possible and agent intellect; cf. p. 505a.

<sup>307</sup> *Disputationes in tres libros Aristotelis de anima*, 452b: "Caeterum, quia potentiae cognoscitivae, ut tales non operantur in ordine naturali, nisi simul agant in ordine intentionali, quia eadem realiter actio correspondet illis, ut ad ordinem naturalem, & intelligibilem spectant, ideò intellectus, verbi gratia, qui simul est actus in ordine naturali, & pura potentia in intelligibili, nequit in nullo ordine operari, nisi prius per formam intelligibilem actuatur." For the mind's dependence on the body and the phantasy, see also pp. 571a-573b. Cf. Arriaga's distinction between the intellect's two "lives", examined in subsection 1.

<sup>308</sup> *Disputationes in tres libros Aristotelis de anima*, 453a-454b.

<sup>309</sup> *Disputationes in tres libros Aristotelis de anima*, 468a-72b. For a similar opposition to the soul-subject thesis, see already Albert the Great (ch. II, § 2.1), and the Renaissance dispute between Nifo (ch. VI, § 3), Zimara (ch. VII, § 1.2), Girelli (ch. VII, § 4.1), and others.

representation of its object<sup>310</sup>. Toletus and Rubio, for example, saw the intelligible species as a merely 'virtual' representation. They emphasized the metaphor of knowledge as a product of "partus potentiae", such that the species has the function of "semen" and cognition is the "proles". Thus, species are like 'virtual seeds' that represent the objects "efficienter". Moreover, if species were formal representations, then the intellect would know immediately after receiving them, which would inevitably deprive it of its vital act. According to these authors, only the mind's second act can be a formal representation<sup>311</sup>. The Carmelite did not accept this interpretation. He gave the following defence of the species as a *formal* representation: (1) it is a form without matter; (2) it is the basis of the formal assimilation of perceptual and cognitive faculties with their respective objects; (3) all representations are primarily formal, and may secondarily also be virtual (like the light of the sun, which is also warm)<sup>312</sup>.

Being formal similitudes of the objects to be grasped, the species make an active contribution to the cognitive act<sup>313</sup>. Accordingly, the cognitive act is not placed in the category of action, but in the category of quality, for it is an "operatio" rather than a "motus"<sup>314</sup>. This shift of emphasis sets the Carmelite apart from the Augustinian psychological activism espoused by many other later schoolmen.

The return to a more genuine form of Thomism is also present in the assessment of the role of the phantasm. Unlike many of his immediate predecessors, the present author saw no reason to ac-

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<sup>310</sup> Also Suarez endorsed this view. However, in the *De anima* text prepared by Alvarez, this view was rejected; cf. § 1.6.

<sup>311</sup> *Disputationes in tres libros Aristotelis de anima*, 457a-458b. See also above.

<sup>312</sup> *Disputationes in tres libros Aristotelis de anima*, 459-460a. See also pp. 461a-b for a theological argument (a comparison between the generation of the "verbum mentis" and the Son).

<sup>313</sup> *Disputationes in tres libros Aristotelis de anima*, 473a-478b.

<sup>314</sup> *Disputationes in tres libros Aristotelis de anima*, 517a-522a. For the description of the intellection as "motus", see Godfrey of Fontaines, *Quodlibet* IX, q. 19, ed. J. Hoffmans, Louvain 1928, 272: "Sed non est ita in proposito, quia ipse actus intelligendi non est actus transiens ab intellectu in obiectum, sed potius e converso; est enim intelligere motus rei ad animam"; cf. ch. III, § 3.3. See already the *Summa halensis*, tomus II, 454: "Intellectus enim possibilis est ad quem terminatur motus qui est ad animam." The argument returned in Peter of Aquila and Thomas of Strasbourg; see ch. IV, § 1.2 and § 3.4.

cept the materiality and singularity of sensory representations as an argument for the direct knowledge of particular things. The phantasm insofar as physiologically embedded is *prior* to any operation of the agent intellect. The phantasm's natural mode of operation, which cannot be detached from its specific material and singular aspects, is not cancelled in the production of the intelligible species; it forms an integral part of this production, as an instrument in an action of a superior order. Hence the intelligible species, which is the product of this cooperation, represents the "quidditas materialis" without material and singular conditions<sup>315</sup>.

### 3.4. *In the shadow of the authoritative masters*

Abra de Raconis was a representative of the widespread Suarezian 'orthodoxy' in psychology. Defending the need for species in sense perception and intellection, Abra<sup>316</sup> argued that the sensible species should not be seen as "corpuscula", and that Scaliger was wrong when he saw the intelligible species as perceived objects<sup>317</sup>. He challenged the view that the illuminated phantasm is insufficient to ground the mental act, while rejecting at the same time the idea that phantasms may exercise a efficient or instrumental causality in the generation of intelligible species. The agent intellect, "per phantasma determinatus", produces the intelligible species on its own. The species, a spiritual quality, does not represent corporeal reality "formaliter", but only "efficienter"<sup>318</sup>. Knowledge of universals is necessarily based on a prior grasp of particular things. However, knowledge of particulars is confused, while universals are "in se notiora".

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<sup>315</sup> *Disputationes in tres libros Aristotelis de anima*, 485a-487b. See also 509a-515a for the argumentation of the phantasm's instrumentality and the polemics with Suarez's view of the phantasm as exercising an "exemplar" causality.

<sup>316</sup> Carolus Franciscus Abra de Ranconis, 1580 Château de Ranconis—1646; of a Calvinist family that was converted to Catholicism; taught philosophy in Paris from 1610; 1637 bishop of Lavaur.

<sup>317</sup> C.F. d'Abra de Raconis, *Totius philosophiae, hoc est ,logicae, moralis, physicae, et metaphysicae brevis et accurata facillique, et clara methodo disposita tractatio*, Avenione 1639-41 (first ed. Paris 1617), vol. I, 314a-317b. Notice that also Suarez rejected the sensible species as corpuscles; see above § 1.6.

<sup>318</sup> *Totius philosophiae tractatio*, 353a-b. See also the authors discussed in the first section.

Hence, it can properly be said that distinct knowledge is first of the universal and then of the particular<sup>319</sup>.

The philosophical textbook of Cosmas Alamannius<sup>320</sup> was basically an expository work, which made no pretense of being original<sup>321</sup>. Its discussion of the species confined itself to giving a series of well-known objections<sup>322</sup>, together with their traditional replies<sup>323</sup>. According to Alamannius, the Aristotelian doctrine of species constitutes a "via media" between the nativism of Plato and Avicenna, and the materialism of Democritus<sup>324</sup>.

Franciscus de Oviedo belonged to the current of psychological activism inspired by Augustine<sup>325</sup>. In his philosophical course<sup>326</sup> he defended the view that knowledge is an immanent, vital act<sup>327</sup>. Intellectual species are required for memory to be possible<sup>328</sup>. Although Oviedo himself presented his view as being Thomistic, it

<sup>319</sup> *Totius philosophiae tractatio*, 356a-58a.

<sup>320</sup> Cosmas Alamanni, 1559 Milan—1634 Milan; entered the Jesuit Order in 1575; studied humanities, philosophy and theology; taught humanities and philosophy in northern Italy. For discussion, see Caruso, *Pedro Hurtado de Mendoza*, 89.

<sup>321</sup> Cosmas Alamannius, *Summa philosophiae e D. Thomae Aquinatis doctoris Angelici doctrina*, Parisiis 1639.

<sup>322</sup> *Summa philosophiae*, 151a-152a: (1) the same subject cannot be perfected by more than one form; (2) the agent intellect cannot produce them; it merely illuminates, and cannot influence the phantasms; (3) the possibility of error would be excluded; (4) the cognitive act is a union between intellect and object; (5) the agent intellect operates without species, and so does the possible intellect; (6) the will does not need any species; (7) cognitive objects may be assimilated without species (cf. Ockham).

<sup>323</sup> *Summa philosophiae*, 153a-b: (*ad* 1) the intellect may contain more than one species "in actu imperfecto"; (*ad* 2) the species owes its content to the phantasm and its form to the agent intellect; (*ad* 3) falsity and error do not play any role in simple apprehension; (*ad* 4) the cognitive union requires an instrumental principle; (*ad* 5) the agent intellect gives to the species its form.

<sup>324</sup> See *Summa philosophiae*, 154a-156b.

<sup>325</sup> Franciscus de Oviedo, 1602 Madrid—1651 Madrid; 1618 entered the Jesuit Order; taught humanities, philosophy and moral theology.

<sup>326</sup> Franciscus de Oviedo, *Cursus philosophicus*, Lyon 1640. For discussion, see Caruso, *Pedro Hurtado de Mendoza*, 84-86.

<sup>327</sup> *Cursus philosophicus*, 98a: "(...) intellectio est quaedam repraesentatio, & imago obiecti, & non quaecumque repraesentatio emortua, sicut imago Caesaris in tabula, sed vivo modo tanquam perceptio, & captio, seu apprehensio obiecti: ergo est repraesentatio quaedam, quâ intellectus apprehendit obiectum & illud quasi manu capit, per exercitium quoddam vitale."

<sup>328</sup> *Cursus philosophicus*, 227a.

was actually more Olivean in its orientation. Species are neither produced by the intellect nor impressed by the phantasms, but they are caused by the objects they represent. It should be noticed, however, that Oviedo's "object" refers to something already known, hence to the mental object. The intelligible species under this construction do not serve to mediate between the intellect and its material object; rather, they are tacitly identified with mnemonic contents—the species are "vicaria obiecti", but not in a proper sense of the word<sup>329</sup>.

Francisco Alonso<sup>330</sup> followed Suarez in his view that the intelligible species are needed to repair a 'defect' in the natural order of cognition. The human mind can assimilate only spiritual entities; hence, the cognitive act needs impressed intelligible species, prior to the act, for its basis<sup>331</sup>. The phantasm is the "causa principalis inadequata" of the species, since the agent intellect provides only its spirituality<sup>332</sup>. The intellection does not consist in a mere reception of impressed species (which were said not to represent the object!), but must be understood in terms of the intellect's two lives<sup>333</sup>. As a 'physical' entity, or more precisely, as a living thing, the intellect produces perfection. At the intentional level, this capacity for perfection leads to the generation of a cognitive act, which 'formally' consists in a "species expressa"<sup>334</sup>. With regard to our knowledge of individuals, and the relationship between agent and possible intellect, Alonso followed the authoritative Spanish masters of the first generations<sup>335</sup>.

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<sup>329</sup> *Cursus philosophicus*, 227a-230b.

<sup>330</sup> Franciscus Alonso, 1600 Malpartida—1649 Alcalá; 1617 entered the Jesuit Order and taught philosophy and theology in Alcalá

<sup>331</sup> Francisco Alonso, *Disputationes in tres libros Aristotelis De anima*, Compluti 1640, 265a-267a.

<sup>332</sup> *Disputationes in tres libros Aristotelis De anima*, 270a.

<sup>333</sup> For a similar distinction, see Arriaga (§ 3.1).

<sup>334</sup> *Disputationes in tres libros Aristotelis De anima*, 308a-315a, in particular, p. 308a-b: "Appellatur [sc. intellectio] etiam [species] expressa, quia taliter repraesentat obiectum, ut illud exprimat, & quasi declaret intellectui ad distinctionem speciei impressae, quae non repraesentat obiectum, declarando illud intellectui; sed solum inclinando per modum habitus ad illius declarationem."

<sup>335</sup> *Disputationes in tres libros Aristotelis De anima*, 270b and 290a-97b.



In his treatise *De anima*<sup>336</sup>, which was not published until recently, Cardinal Joannes de Lugo<sup>337</sup> deemed the intelligible species to be probably necessary<sup>338</sup>. He followed Suarez in defining the species as “*imago virtualis seu causalis*”, which contributes to the intellection as its partial cause. Apparently convinced of the fact that species are needed to explain the coherence of mental activity, Lugo grappled with the problem (without finding any reasonable solution) of how the aspect of time in recollections of past experiences may be represented by the species, which seem to be strictly a-historical and object-dependent entities<sup>339</sup>.

In a *Summa universae philosophiae*<sup>340</sup>, Balthasar Tellez<sup>341</sup> defended the species against Durandus. He subscribed to the view that sense perception and knowledge are vital actions, while adding that vital actions are not necessarily based on vital principles. Indeed, rather than being a formal sign (which would entail that it can be known), the species is a spiritual accident, that is, an intentional entity that bears likeness to the object insofar as it represents it<sup>342</sup>. The species informs the cognitive power from which the mental act flows<sup>343</sup>. Tellez followed Suarez in according

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<sup>336</sup> See Florentino Alcañiz, S.J., *De autographo inediti Card. Joannis de Lugo “De anima”*, Madrid 1936.

<sup>337</sup> Joannes de Lugo, 1583 Madrid—1660 Rome; studied grammar, law, logic, theology and philosophy; taught philosophy and theology in Pamplona, Salamanca, Rome, and other places.

<sup>338</sup> *De anima*, 47 and 107.

<sup>339</sup> *De anima*, 49-56; see also p. 59. On p. 148, he observed that the species of intuitive cognition represent without the dimension of time; therefore, a “species durationis” would seem to be required.

<sup>340</sup> P.M. Balthazare Tellez, *Summa universae philosophiae*, Ulyssipone 1641.

<sup>341</sup> Balthasar Tellez, 1596 Lisbon—1675 Lisbon; 1610 entered the Jesuit Order; taught theology and philosophy.

<sup>342</sup> *Summa universae philosophiae*, 307a-8a. On the intellection as immanent act, see also pp. 336b-338a.

<sup>343</sup> *Summa universae philosophiae*, 311b-12a; see also pp. 334b-335a: “cum ergo intellectus non sit immediate unitus rei cognoscendae, necessario danda est species, quae constituat rem praesentem & faciat assimilationem quandam, per quam res sit praesens intentionaliter, quando non potest esse praesens realiter, unde quando res fuerit immediate, & realiter praesens, ut Deus est intellectui Beatorum, non requirit speciem intentionalem impressam, (...)”. For Tellez’ views on intuitive and abstractive cognition and their respective species, see pp. 345-349b.

priority to the knowledge of particulars<sup>344</sup>, and also in his view of the cooperation between phantasm and agent intellect in the production of intelligible species. The illumination of the agent intellect causes an effect in the possible intellect rather than in the phantasm, in the sense that the latter's content appears as an intelligible object in the human mind<sup>345</sup>.

### 3.5. A Scotistic controversy: Ponce versus Mastrius and Bellutus

#### 3.5.1. John Ponce

Together with Dandini, John Ponce was among the last Scholastics to express serious doubts about the need for abstracted intelligible species<sup>346</sup>. It is remarkable that he did not reject intelligible species *tout court*, but only "pro hoc statu". He supported this view by invoking an number of authorities, including Scotus (citing his *De anima* commentary, q. 17<sup>347</sup>), Cavellus, Themistius, Theophrastus, Ockham, and Baconthorpe. He pointed out that also Arriaga tended to consider species as dispensable<sup>348</sup>. I shall briefly

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<sup>344</sup> *Summa universae philosophiae*, 336a: "Ex quibus colligitur, abstractionem Universalis nullo modo relucere in specie intelligibili impressa, sed solum in expressa, quam intellectus producit supposita cognitione multorum singularium, quam habuit medianibus speciebus impressis."

<sup>345</sup> *Summa universae philosophiae*, 331a. See also p. 342a-343, for the necessity of the phantasms.

<sup>346</sup> Johannes Poncius, 1599 Cork—1661 Paris; joined the Franciscans; studied philosophy in Cologne and theology in Louvain and Rome; 1633-1639, cooperated with Wadding on the edition of the works of Scotus; taught theology from 1647. For Dandini, see *supra* § 2.2.3; subsequently the need for intelligible species would be questioned by Lalemandet, see ch. XII, § 2.5.

<sup>347</sup> The intelligible species was defended in the *De anima* commentary, which was published in Scotus' *Opera*, tomus secundus, Lyon 1639, 477-662. There is no conclusive evidence that this work is authentic, but it faithfully represents Duns' thought. On the authenticity of this commentary, see also K.H. Tachau, "The problem of the *species in medio* at Oxford in the generation after Ockham", in *Mediaeval Studies* 44(1982), 394-443, on p. 431, note 127.

<sup>348</sup> Ioannes Poncius, *Integer Philosophiae cursus ad mentem Scoti, IIIa Pars Complectens Libros de Gen. & Corrup. Meteoris, Anima, Parvis naturalibus, & Metaphysica*, Romae 1643, 467b. For discussion of Ponce's view on intelligible species, see S.J. Day, *Intuitive Cognition. A Key to the Significance of the Later Scholastics*, St. Bonaventure (N.Y.) 1947, 105-108. Ponce's view on intelligible species will frequently be referred to by later schoolmen; cf. Ant. Bernardus de Quiros, *Opus philosophicus*, Lugduni 1666, 604a; Gabriel a Sancto Vincentio, *In libros Aristotelis (...) de Anima (...)*, Romae 1670, 447a-452a; for discussion of the latter, see *infra*, subsection 3.5.3.

examine Ponce's refutation of the classical arguments on behalf of the intelligible species.

No species is required for presenting the universal to the intellect, because both the universal and the particular object are reasonably capable of presenting themselves without the intervention of the (agent) intellect. The argument that the object (either in itself or insofar as it is present in the phantasm) cannot move the will, and therefore cannot move the intellect either, does not hold, for the will is subordinate to the intellect, and not vice versa. That the separate soul should need intelligible species to remember its earthly life, is an argument based on purely theological grounds, and as such falls prey to an Ockham-like razor<sup>349</sup>. The species doctrine looks upon the phantasm as the partial cause of intelligible species; hence, it must admit that the phantasm should be able to move the possible intellect, perhaps even without producing a species at all. As Arriaga pointed out, the only defence of the species is in terms of *a posteriori* arguments<sup>350</sup>. The one *a priori* argument, to the effect that the will cannot be moved by material knowledge, and therefore neither the intellect, is invalid, for the intellect depends on perceptual capacities for its knowledge. Finally, the argument given by the College of Alcalá ("disp. 19 *de anima*, sect. 2"), to the effect that there are intellectual acts independent from the phantasms, is said to be false<sup>351</sup>.

In his conclusion, Ponce pointed out that the arguments for intelligible species and for a distinct agent intellect are affected by the fallacy of circular reasoning. Intelligible species and distinct agent intellect mutually presuppose each other. If there are no abstracted intelligible species, then it is pointless to assume an agent intellect as distinct from the possible intellect<sup>352</sup>. In this context,

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<sup>349</sup> *Integer Philosophiae cursus*, 469b: "sicut non est recurrendum ad Deum sine necessitate, ita non sunt multiplicanda hic entia sine necessitate." For the memory of the separate soul, see also pp. 485a-b.

<sup>350</sup> See also above § 3.1.

<sup>351</sup> *Integer Philosophiae cursus*, 468a-472a.

<sup>352</sup> *Integer Philosophiae cursus*, 472b; cf. also p. 476b, where Ponce opposed the Thomists and adhered to the view of Nifo, Suarez, and the Conimbricenses for the denial of a real distinction between agent and possible intellect. For the logical connection between the denial of both intelligible species and a distinct agent intel-

Ponce also stressed another problem: once the intelligible species have been acquired, they would be imperishable—a result that is contradicted by the fact that we are prone to forget things<sup>353</sup>. The only intelligible species that might reasonably be claimed to be preserved forever, would be those that are impressed by a superior cause, namely, by God or by the angels. For the purposes of everyday life, however, no such assumption is needed: there the intelligible species as traditionally conceived can simply be identified with the act of intellectual representation<sup>354</sup>. Elsewhere, Ponce used the unprovability of the need for species as an argument for the necessity of the intellect's conversion to the phantasms<sup>355</sup>.

Ponce's stand on the nature of the cognitive act accorded with his grave doubts about the species. He did not accept the view of the intellection as "receptio speciei intelligibilis", which he attributed to Godfrey of Fontaines, Giles of Rome, and Agostino Nifo<sup>356</sup>. He invoked the authority of Augustine (*De Trinitate*, IX, c. ult.), and observed that some sensible capacities do not have any impressed species at their disposal. He also referred to Rubio for the view that the act of the sensible (the impressed species) and that of the sensitive power (sensation) coincide only with respect to their "subiectum". The parallelism between senses and intellect is thus only partial, and cannot be used as an argument for the identity of cognitive act and species at the mental level<sup>357</sup>. Moreover, many species, preserved in memory, are not actually known. Notice, incidentally, that this entails that Ponce did not reject *a priori* the possibility of species existing in memory. Indeed, he repeatedly stressed the fact that he saw species as being

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lect, see already Durandus (ch. IV, § 2.1) and, among Ponce's contemporaries, Lalemandet (ch. XII, § 2.5).

<sup>353</sup> *Integer Philosophiae cursus*, 473b-474b.

<sup>354</sup> *Integer Philosophiae cursus*, 476a: "Solum hic advertendum, quod quando dicitur intellectus agens spiritualizare obiectum corporeum relucens in phantasmate, per illud nihil aliud intelligi debet quam quod producat speciem qua repraesentari possit illud obiectum spiritualiter, per cognitionem scilicet intellectivam, quae spiritualis est." For the assimilation between species and cognition, see also 524a-b.

<sup>355</sup> *Integer Philosophiae cursus*, 482a-484b. In this context, he refutes Thomas.

<sup>356</sup> He cites Godfrey of Fontaines, *Quodl.* 4; Giles of Rome, *Quodl.* III, q. 11; and Nifo, *De int.* V, c. 9.

<sup>357</sup> See *Integer Philosophiae cursus*, 490b-491b. At an earlier stage, Ponce already observed that not all senses use species; cf. p. 467b.

*probably* redundant<sup>358</sup>, and, as we have seen, he sometimes defined the intellective act as species<sup>359</sup>. Ponce also rejected several other views of intellection<sup>360</sup>. “Formaliter loquendo”, the intellection consists in a quality or perfection, produced by the intellect with the direct cooperation of the phantasms (if there are no intelligible species, which is probable), or by means of the intelligible species (“si dentur”)<sup>361</sup>.

Presented within the purview of a Scotistic course in philosophy, Ponce’s ideas about the intelligible species are rather surprising and puzzling. As is well-known, Duns defended the need for intelligible species against the objections of Henry of Ghent, Peter Olivi and Godfrey of Fontaines. Also his followers generally accepted the intelligible species. Yet, Duns Scotus did not establish anything like a definite consensus among Franciscans on this point, as is clear from subsequent refutations by Ockham and others. Also after the rise of the Renaissance Scotism dissension did not wear off. Recall in this context the polemics of the Franciscan theologian Gerolamo Girelli against Marcantonio Zimara’s defence of the intelligible species. Girelli even submitted an interpretation of Duns such that his theory of the intelligible species should be seen as a purely theological hypothesis, required for the explanation of memory in separate souls<sup>362</sup>. Ponce’s doubts about the intelligible species should be seen against this background. He rejected the need for abstracted intelligible species mediating between intellect and sensible object, because he thought that the phantasm itself is reasonably sufficient ground for the objective reference of intellectual cognition. On the other hand, he also frequently described the (effect of the) intellectual act as a

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<sup>358</sup> See *Integer Philosophiae cursus*, 483b, 505a-b.

<sup>359</sup> See also *Integer Philosophiae cursus*, pp. 516a-519b, for the definition of the intellective act as “notitia genita, verbum mentale, species expressa, similitudo formalis”.

<sup>360</sup> See *Integer Philosophiae cursus*, 489a, for the description of the views of Aversa, the Conimbricenses, Hurtado, the College of Alcalá, and that of Scotus. The first four are rejected; cf. 494b-499a.

<sup>361</sup> *Integer Philosophiae cursus*, 499a-505b.

<sup>362</sup> See ch. VII, § 4.1.

species, which makes it probable that he accepted the intelligible species in the strict sense of mnemonic content<sup>363</sup>.

### 3.5.2. Bartholomew Mastrius and Bonaventura Belluti

Two other Scotistic theologians<sup>364</sup>, contemporaries of Ponce, chose to defend the need for impressed intelligible species as virtual images of the object, preceding the cognitive act<sup>365</sup>. Remarkably, however, they did not accept the traditional arguments in behalf of a formal mediation in intellectual cognition.

In the first place, intelligible species do not determine the intellect, but direct it towards one object rather than another. Secondly, the argument of the mind's needing a proportionate object does not hold: if phantasms are granted a role in generating intelligible species, then they should also play a role in the intellection. Thirdly, that the species are needed as a link between the perceptual world and the intellectual realm (the argument from two "ordines"), is judged as not convincing. Finally, no species are needed for knowledge of universals, since the latter are uncovered by the light of the agent intellect in the phantasms<sup>366</sup>.

As a result, the existence (notice: not the necessity!) of intelligible species can be deduced only from memory<sup>367</sup>. Mastrius and

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<sup>363</sup> See already Peter Olivi (ch. III, § 3.4) and Gregory of Rimini (ch. IV, § 3.4).

<sup>364</sup> Bartholomaeus Mastrius, 1602 Meldola—1673 Meldola; after studies of humanities and philosophy, joined the Franciscans in 1617; studied philosophy and theology; taught with Bellutus in Cesena, Perugia and Padua; 1639-1646, controversies with Ponce. Bonaventura Bellutus, 1660 Catania—1676 Catania; entered the Minors, and cooperated with Mastrius until 1641. For more information about Mastrius, see B. Crowley, "The life and works of Bartholomew Mastrius, O.F.M. Conv. 1602-1673", in *Franciscan Studies* 8(1948), 97-152. For a short overview of their psychology, see Kessler, "The intellective soul", 509-510.

<sup>365</sup> Bartholomaeus Mastrius & Bonaventura Bellutus, *Disputationes In Aristotelis Stagiritae Libros De Anima*, Venetiis 1671 (first edition: Venice 1643), p. 404b: "(...) qualitates nimirum spirituales per modum permanentis, quae sunt veluti semina obiectorum ad faecundandum intellectum pro eorum cognitione".

<sup>366</sup> *Disputationes De Anima*, 405b-407b.

<sup>367</sup> *Disputationes De Anima*, 409a: "Itaque cum Mairon. putamus pro speciebus intelligibilibus validiorem rationem adduci non posse, quam quae deducitur ex memoria intellectiva, & recordatio." On p. 417a-418b, Mastrius and Belluti defended this view against Ponce who blamed them for misinterpreting

Belluti did not reject the intelligible species, but they regarded it as a kind of higher-order phantasm, rather than as an indispensable link between perception and cognition. Against the Thomists they argued that the intellect without the species is not incomplete<sup>368</sup>. The species abstracted by the agent intellect is not different from the phantasm in terms of intentional content, but only “ex propria entitate”. Indeed, the agent intellect abstracts only from matter, such that the abstracted intelligible species represents the universal nature with its singular aspects intact. It is only the possible intellect that spoils the species of its individuality<sup>369</sup>.

Intelligible species and agent intellect are functional elements in the process of presenting intelligible contents to the possible intellect. The agent intellect has a twofold operation: to illuminate the phantasms by actualizing their potential intelligibility, and to produce the intellectual act. No other form of illumination is required, neither ‘objective’ (Henry of Ghent, Caietan), ‘formal’ (ascribed to Alexander by Piccolomini), or ‘radical’ (Capreolus, Ferrara). The agent intellect’s operation should rather be seen as a sort of processing (being defined as ‘effective’) of the phantasm in order to involve the latter in producing the intelligible species, “in qua solum redditur obiectum actu intelligibile”<sup>370</sup>.

### 3.5.3. A late response to Ponce: Gabriel of Saint-Vincent

After the death of Ponce, his rejection of intelligible species was challenged by Gabriel of Saint-Vincent<sup>371</sup>. This Italian Carmelite<sup>372</sup> argued that knowledge requires intelligible species as well as

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the words of Scotus. For the relation between Ponce and Matrius, see Caruso, *Pedro Hurtado*, 100-106.

<sup>368</sup> *Disputationes De Anima*, 410b. See also p. 420b: for intuitive knowledge no species are required.

<sup>369</sup> *Disputationes De Anima*, 409a. See also Suarez’s view of abstraction in § 1.6.4.

<sup>370</sup> *Disputationes De Anima*, 445b; cf. 427b-445b.

<sup>371</sup> Gabriel a Sancto Vincentio, O.C.D., † 1671; author of theological and philosophical works.

<sup>372</sup> In his argument for intelligible species, Gabriel often referred to the *De anima* commentary of the Carmelite College of Alcalá. See Gabriel a Sancto Vincentio, *In libros Aristotelis (...) de Anima, Parvorum Naturalium, & Metaphysicorum*, Romae 1670, 316b, 327b, and *passim*.

sensible species, which are both taken here in the sense of virtual similitudes or signs<sup>373</sup>. Like Thomas, Gabriel believed that sensible species are produced by the sensible objects in virtue of the intelligences that move the celestial bodies (sun, moon, stars)<sup>374</sup>. Intelligible species are not produced by the object but by the agent intellect, which elaborates on the sensible species by divesting them from their particular features<sup>375</sup>. Thus, *pace* Ponce<sup>376</sup>, human knowledge is not directly dependent upon the phantasms. Together, the intellect and the impressed (intelligible) species generate the mental act as a single, coherent cause<sup>377</sup>.

The species are the 'seeds' of the objects, which fertilize the soul so that it may give birth to cognition<sup>378</sup>. Unlike many later Scholastics, Gabriel sharply distinguished between species, intellection, and "verbum mentis" or "species expressa". The latter is seen as the internal object of the mind, that is, the product of the mental act triggered by the impressed species. The mental act is characterized as "similitudo effectiva", the expressed species as "similitudo formalis"<sup>379</sup>.

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<sup>373</sup> *In libros Aristotelis (...) de Anima*, 308a-17a; see also pp. 322a-323b, and 327a: object and species share the same essential features "in esse repraesentativo"; cf. p. 457b.

<sup>374</sup> *In libros Aristotelis (...) de Anima*, 319b. See *De potentia*, q. 5, a. 8: "Haec autem est actio corporis, quae non est ad transmutationem materiae, sed ad quamdam diffusionem similitudinis formae in medio secundum similitudinem spiritualis intentionis quae recipitur de re in sensu vel intellectu; et hoc modo sol illuminat aerem, et color speciem suam multiplicat in medio. Uterque autem modus actionis in istis inferioribus causatur ex corporibus caelestibus." In this passage, Thomas developed a view similar to the doctrine of universal force in Alkindi, which, originating from the Neoplatonic doctrine of emanation, had already been proposed by Grosseteste and Roger Bacon. For Thomas' view of sensible species, see ch. II, § 3.2.

<sup>375</sup> *In libros Aristotelis (...) de Anima*, 321b: "Species quae sunt in nostro intellectu non causantur ab obiecto, sed ab intellectu agente denudando speciem obiecti: unde obiectum concurrit solum materialiter, non effective, subministrando speciem, quam intellectus agens purgat à conditionibus individuantes." On p. 456b, Gabriel characterized the agent intellect as knowing, not "formaliter", but "radicaliter", since it incites the possible intellect to know.

<sup>376</sup> *In libros Aristotelis (...) de Anima*, 452a. See also pp. 433b and 457a, for the causal responsibilities of phantasm and intellect in the generation of species.

<sup>377</sup> *In libros Aristotelis (...) de Anima*, 327b: Gabriel rejected the view that intellect and species are partial causes.

<sup>378</sup> *In libros Aristotelis (...) de Anima*, 329b.

<sup>379</sup> *In libros Aristotelis (...) de Anima*, 439b-442b.



At a later stage of his discussion Gabriel turned to the question of whether intelligible species are at all needed. He explicitly took issue with Ponce's denial of this need, which had invoked the authority of Scotus, Cavellus, Themistius, Theophrastus, Ockham, "nominales", and Baconthorpe<sup>380</sup>. Against Ponce, Gabriel raised the following arguments: (i) universal objects cannot be known on the basis of phantasms that are not able to move the intellect<sup>381</sup>; (ii) intelligible species yield the mental contents for memory in the separate soul; (iii) the intellect is indifferent with respect to its objects, and therefore it needs an immanent principle of specification; (iv) volitive action is possible only on condition of knowledge; moreover, such action is known by the intellect, which presupposes mediating species<sup>382</sup>.

### 3.6. *Claudio Berigardus*

Berigardus's<sup>383</sup> exposition on Aristotelian philosophy of mind, written in the form of a dialogue, stood well apart from the mainstream of Scholastic works of its time, in literary genre as well as in terminology, but also in the doctrinal outlook it endorsed<sup>384</sup>.

Berigardus rejected the theories of those authors who attributed to Aristotle the doctrine of the mortality of human soul<sup>385</sup>. He explicitly agreed with Avicenna that the (agent) intellect is unique, and that it belongs to mankind rather than to a single body. From Averroes he borrowed the idea that the form of man is the "cogitativa" or phantasy. It was probably under the influence of Alexander that he identified the human "intellectus patiens" with

<sup>380</sup> *In libros Aristotelis (...) de Anima*, 445a.

<sup>381</sup> See also *In libros Aristotelis (...) de Anima*, 427b: the cognitive object is "quidditas rei materialis", and not "ens sensibile, ut vult Pontius".

<sup>382</sup> *In libros Aristotelis (...) de Anima*, 445b-448a.

<sup>383</sup> Claudius Berigardus, 1590/92 Moulins—1663 Padua; studied philosophy in Paris; taught philosophy in Paris and Pisa, and between 1639 and 1663 in Padua. For more information, cf. M.L. Soppelsa, "Il ruolo dello Scotismo nella *Philosophia naturalis* postgalileiana a Padova", in *La tradizione scotista veneto-padovana*, ed. C. Bérubé, Padova 1979, 345-354, p. 345, note 2.

<sup>384</sup> Claudius Berigardus, *De vetera et peripatetica philosophia. In Aristotelis libros octo Physicorum. Quatuor de Caelo. Duos de Ortu & interitu. Quatuor de Meteoris, & tres de Anima*, Pataviis 1661 (first edition 1643-47).

<sup>385</sup> *De vetera et peripatetica philosophia*, circulus XX "De mente humana", 711. In particular, Pomponazzi is charged with "maximé dementiae".

the (corporeal) phantasy<sup>386</sup>. This ensemble of doctrines determined his view of species.

Against Zabarella, Berigardus pointed out that impressed species and expressed species are equally un-Aristotelian, because the body cannot influence the immaterial mind. Indeed, Berigardus mentioned on several occasions that intellection is received in the phantasy or in the possible intellect (which amounts to the same), and not in the unique intellect. Furthermore, no (intelligible) species can remain after the cognitive act, because otherwise phenomena such as hallucinations would not be possible<sup>387</sup>. In fact, besides the corporeal image, no impressed species should be postulated:

(...) propterea non alia opus esse specie impressa, quàm simulacro corporeo existente in phantasia, quod intellectus agens hoc est mens ipsa illuminat & corroborat sua presentia ita ut iam mens, & simulacrum illud intellectionem eliciant, quae recipitur in phantasia.<sup>388</sup>

Berigardus thus endorsed a basically Alexandrian view of human cognition. Knowledge acquisition is a natural process, in the course of which the human soul is altered by sensible representations; these representations, once they are illuminated by a separate agent, enable the soul to grasp the intelligible structure of reality.

#### § 4. CONCLUSION

The dispute on intelligible species among later schoolmen was essentially different from that among medieval and Renaissance authors. Only rarely was the need for intelligible species questioned in a serious manner; Dandini and Ponce are exceptions that prove the rule. In most cases, the defence of species repeated the traditional objections and refuted them with equally traditional replies. The controversies among representatives of the Second

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<sup>386</sup> *De vetera et peripatetica philosophia*, 712-17.

<sup>387</sup> *De vetera et peripatetica philosophia*, 726. Cf. p. 717: after death no species remain, since memory is a sensitive faculty; on this page, Berigardus also polemized with Zabarella's view of impressed and expressed species or intellection.

<sup>388</sup> *De vetera et peripatetica philosophia*, 727.

Scholasticism were mainly about the cognitive role of the species, and about the form of interaction between mind and sensory representation in the generation of knowledge.

The innovations that emerged from psychological discussions among later Scholastics may be summarized as follows. In the first place, many authors convincingly argued that the intelligible species are effective, and not formal representations. Species play a causal role in the generation of knowledge. In this sense, then, the notion of intelligible species contributed to the development of non-circular explanations of knowledge acquisition. Secondly, most later schoolmen drew the logical conclusion that, if the intelligible species are impressed, they can represent only individuals or singular aspects of individuals<sup>389</sup>. Thirdly, Suarez and some of his early followers made a case for the active and conscious role of the intellect in the generation of primary knowledge, that is, of simple apprehension. This view, which probably reached back to Olivi, would also recur in many modern philosophers of the seventeenth century, such as Descartes and Locke.

A revealing aspect of later Scholastic psychology is its abundance of biological metaphors. The intelligible species were commonly compared to “seeds” that would “fertilize” the intellect<sup>390</sup>. Knowledge was generally seen as a “vital” action. Fabro called the soul an “*animalis vis*”, while Arriaga and Alonso devised a theory of the intellect’s two “lives”. This ‘biology of knowledge’, as we may call it, served a quite distinct purpose for the authors discussed here. It allowed them to amalgamate various strands of Peripatetic cognitive psychology in general, and of the traditional species doctrine in particular. Moreover, it allowed the notion of intelligible species to blend in with certain typically Augustinian ideas, which were sometimes even borrowed from medieval opposition against the species<sup>391</sup>.

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<sup>389</sup> See also ch. III, § 6.

<sup>390</sup> Cf. Martinez (§ 1.2), Suarez (§ 1.6), Murcia de la Llana (§ 2.1.1), the College of Alcalá (§ 3.3), and Gabriel of Saint-Vincent (§ 3.5.3).

<sup>391</sup> An example here is the presence of Olivi in Suarez.

Knowledge as a vital operation, or more to the point, knowledge as a purely *mental* operation, announced the mentalism that was to become typical of many modern, non-Aristotelian psychologies.

## CHAPTER ELEVEN

### MODERN PHILOSOPHY: FROM SPECIES TO IDEA

The Scholastic theory of perception and cognition was a common target of attack for modern philosophers such as Descartes, Hobbes, and Gassendi, one of the main stumbling blocks being the intentional species<sup>1</sup>. The profound differences of opinion between traditional and modern psychologies do not mean that there was not also continuity, however, or that all comparison between them falls short. The central notion of idea in seventeenth-century philosophy significantly resembled the abstracted species of lore in terms of its role in the processes leading up to knowledge of sensible reality<sup>2</sup>. Another point of contact between moderns and Peripatetics was their shared belief that single objects or essences are captured by primary mental acts concerning sensible reality<sup>3</sup>.

In this chapter, I first examine Descartes' views on the origin of perceptual ideas against the background of traditional Peripatetic psychology (section 1). I then turn to the production of images and ideas according to Hobbes, and the relationship between his account and ancient and medieval epistemology (section 2). The third and final section is devoted to Gassendi's theory of species and ideas.

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<sup>1</sup> Also Mersenne, who did not reject the objective existence of sensible qualities, cast doubt on the need for intentional species; cf. F. Brandt, *Thomas Hobbes' Mechanical Conception of Nature*, Copenhagen-London 1928, on p. 160.

<sup>2</sup> Also at a terminological level, "idea" started to replace the traditional species; cf. G. Gorcy, "Idée(s) dans le corpus textuel de l'INaLF du dix-septième siècle (1601-1715), Descartes et Malebranche exceptés", in *Idea. VI Colloquio Internazionale del Lessico Intellettuale Europeo*, eds. M. Fattori & M.L. Bianchi, Roma 1990, 155-186, on p. 164.

<sup>3</sup> Descartes, Hobbes, and Gassendi did not challenge the notion of simple apprehension.

## § 1. DESCARTES: INNATISM AND PERCEPTUAL IDEAS

Descartes set out a new encompassing framework for cognitive psychology. His explanation of our knowledge of the sensible world involved a neurophysiological account of the complex motions leading up to the formation of brain patterns in the pineal gland, along with a metaphysical account of the mind's producing perceptual ideas on the occasion of, and attending to, these patterns in the pineal gland. Descartes believed that the mechanical character of the production of brain patterns, and the radical dualism of mind and body, invalidated the traditional doctrine of species as a model for explaining the acquisition of knowledge of corporeal reality. His rejection of the species theory took into consideration: (i) the lack of resemblance between the physical motions leading up to perception and the perceptual ideas produced by the mind, and (ii) the fact that it is impossible for something corporeal to enter into the immaterial mind (an argument of long-standing repute)<sup>4</sup>.

What exactly was Descartes' 'debt' to the Scholastic doctrine of intelligible species? As is well-known, Descartes received a Scholastic education<sup>5</sup>. It has often been suggested that his attitude towards the School was totally dismissive, but in reality it was rather ambivalent. He frequently rebuked the schoolmen for defending an outdated philosophy. At the same time, however, he continued to work with their traditional vocabulary. Moreover,

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<sup>4</sup> It is remarkable that in *Meditationes*, in *Oeuvres*, eds. Ch. Adam & P. Tannery, Paris 1982-87, vol. VII, p. 41, Descartes observed that the *stone* does not introduce anything into the soul. Aristotle, discussing the mind's grasping the essence of material things, used precisely this example, and observed that not the stone, but its *eidos* was present in soul; cf. *De anima*, 431b30-432a1. Subsequently, all Peripatetics would standardly refer to this example of the stone. The edition of Descartes' works will be abbreviated from now on as *AT* followed by the number of the volume.

<sup>5</sup> On Descartes' instruction at La Flèche, see G. Rodis-Lewis, *L'oeuvre de Descartes*, 2 vols., Paris 1971, vol. I, 15-25; G. Crapulli, *Introduzione a Descartes*, Roma-Bari 1988, p. 7; and L. Gilen, "Über die Beziehungen Descartes' zur zeitgenössischen Scholastik", in *Scholastik* 32(1957), 41-66, p. 43f. For a general discussion of Descartes' relationship with the School, see D. Garber, "Descartes, the Aristotelians and the revolution that did not happen in 1637", in *Monist* 71(1988), 471-86; R. Ariew, "Descartes and Scholasticism: The intellectual background to Descartes' thought", in *The Cambridge Companion to Descartes*, ed. J. Cottingham, Cambridge 1992, 58-90.

from his correspondence with Mersenne it appears that Descartes composed his *Principles of Philosophy* as a philosophical textbook with the deliberate aim of giving better solutions to traditional problems<sup>6</sup>. Descartes' references to Aristotle and to Scholastic philosophy, which are found mainly in his correspondence, only rarely pertain to any one author or school in particular<sup>7</sup>. This does not mean, however, that only the most abstract comparisons between Cartesian and Scholastic psychology are called for, which as a rule tend to be highly unsatisfactory<sup>8</sup>. Although it is admittedly hard to pin-point any direct Scholastic sources for Descartes' psychology of cognition, there are many parallels with earlier and contemporary 'traditional' philosophy, both at the terminological<sup>9</sup> and at the systematical level. Examples of the latter include Descartes' doctrine of perception<sup>10</sup> and his conception of ideas<sup>11</sup>.

<sup>6</sup> See A.G.A. Balz, *Descartes and the Modern Mind*, New Haven 1952, pp. 23-24; Gilen, "Über die Beziehungen Descartes' zur zeitgenössischen Scholastik", 49-51. See also AT III, 523.

<sup>7</sup> See E. Gilson, *Index scolastico-cartésien*, Paris 1979, 358. In the early 40's, Descartes intended to make a new study of Scholastic philosophy; in his correspondence he recalled the College of Coimbra, Toletus, and Rubio; cf. AT III, 185. The works of Eustachius of Saint-Paul and Abra Raconis were probably a model for his *Principia philosophiae* (AT VIII.1); cf. AT III, 232-33 and 251. On Descartes and Eustachius, see F. Van de Pitte, "Some of Descartes' debts to Eustachius a Sancto Paulo", in *Monist* 71(1988), 487-497.

<sup>8</sup> See B.E. O'Neill, *Epistemological Direct Realism in Descartes' Philosophy*, Albuquerque 1974, pp. 31-33, on Descartes' use of the Thomistic abstraction. Cf. also J.W. Yolton, *Perceptual Acquaintance from Descartes to Reid*, Oxford 1984, who on p. 6, characterizes Scholastic psychology in the 17th century as presupposing the indirectness of knowledge, because only a representational proxy is present to the mind; see also p. 22. Equally unsatisfactory is the analysis by E.J. Ashworth, "Descartes' theory of clear and distinct ideas", in *Cartesian Studies*, ed. R.J. Butler, Oxford 1972, 89-105, who on pp. 89-91 assimilates species to concepts. A rather idiosyncratic approach to Descartes' relation with the Scholastic psychology is formulated by J. Rohmer, "La substitution cartésienne de l'intentionnalité intellectuelle à l'intentionnalité sensible", in *Revue des sciences religieuses* 26(1952), 250-269, who criticizes, from a Scholastic point of view, the Cartesian rupture between mind and sensible world.

<sup>9</sup> The allegedly typically Cartesian expression "clare et distincte" (see, for example, *Discours de la Méthode*, AT VI, 41) can be found already in Ruuius, *Commentarii in libros Aristotelis Stagyrtae (...), de Anima (...)*, Lugduni 1613, 665; Pallavicini, *Explanatio paraphrastica in libros Aristotelis de Anima*, Mediolani 1610, 246, 256-7; Eustachius, *Summa philosophiae quadripartita de rebus dialecticis, moralibus, physicis et metaphysicis*, Coloniae 1629, 273.

<sup>10</sup> Significant anticipations of the assimilation of all sense perception to touch are found in Telesio and Campanella; cf. ch. VIII, § 3.2 and 5. Telesio's name was familiar to Descartes; cf. AT I, 158. For an early modern parallel with Descartes'

My purpose in this section is principally to dispel part of the myth of Descartes' originality in the field of cognition<sup>12</sup>. I want to reconstruct part of the philosophical environment in which his views on perceptual knowledge matured, with particular attention to any parallels there may be between Cartesian psychology and the views of medieval and Renaissance Peripatetic philosophers on the nature, function, and origin of the intelligible species.

The first subsection discusses Descartes' analysis of the process of perception and his rejection of sensible species. In the second subsection I compare Descartes' views on the origin of perceptual

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views on the relationship between the mechanics of sense perception and mental acts, see the position developed by Cusanus; cf. ch. VI, § 1.1. Descartes was acquainted with Campanella's *De sensu rerum et magia*, but rejected his animism; cf. E. Gilson, *Études sur le rôle de la pensée médiévale dans la formation du système cartésien*, Paris 1984 (first ed. 1930), 263-264; and L. Oeing-Hanhoff, "Seele und Geist in philosophischen Verständnis Descartes'", in *Seele. Ihre Wirklichkeit, ihr Verhältnis zum Leib und zum menschlichen Person*, ed. K. Kremer, Leiden-Köln 1984, 84-99, on p. 86.

<sup>11</sup> See *infra*, subsection 2. Remarkably, in his Objections, Gassendi used "species" and "idea" as interchangeable terms; cf. *Meditationes*, 280, 296, and 337. For a similar use by Regius, cf. *Notae in programma*, AT VIII.2, 365; see ch. XII, § 1.2.2. Notice, furthermore, that the (Cartesian) idea would be assimilated to species by Locke; see ch. XIII, § 2. See also Rohmer, "La substitution cartésienne de l'intentionnalité intellectuelle à l'intentionnalité sensible", 113; and B.N. O'Neil, *Epistemological Direct Realism*, 52: the Cartesian ideas take the place of the sensible species. See also the (inadequate) definition of the Thomistic species in Descartes, *Oeuvres philosophiques*, ed. F. Alquié, vol. II, 520, note 1: "Mais il faut reconnaître que le langage de Descartes favorise la confusion. Quand il écrit: *être dans l'entendement en la manière que les objets ont coutume d'y être*, il pense à l'existence propre de l'idée comme telle. Un thomiste, le lisant, pense à l'espèce (*species*), qui est, non point une image ou un substitut de l'objet réel, mais l'objet lui-même considéré dans l'action qu'il exerce sur le sujet."

<sup>12</sup> Leibniz tried to debunk Descartes' alleged originality; see *Philosophische Schriften*, ed. C.I. Gerhardt, Hildesheim 1965 (first edition Berlin 1857-90), Band I, 198, and, in particular, Band IV, 310-311, where Leibniz mentioned Aristotle, the Stoics, Democritus, Leucippus, Giordano Bruno, Gilbert, and Bacon as sources of Descartes' philosophy. See also *Nouveaux essais sur l'entendement humain*, in *Sämtliche Schriften*, edited by the Leibniz-Forschungsstelle der Universität Münster, vol. VI.6, Berlin 1962, IV.x.7, where Leibniz stressed the importance of Descartes' education at La Flèche. For discussion, see K. Eschweiler, "Die Philosophie der spanischen Spätscholastik auf den deutschen Universitäten des siebzehnten Jahrhunderts", in *Spanische Forschungen des Görresgesellschaft* 1(1928), 251-325, on pp. 252-53; Y. Belaval, *Leibniz critique de Descartes*, Paris 1960, 119-120. For a similar attack in the Netherlands during the 1640's, see Martinus Schoock, *Admiranda Methodus novae philosophiae Cartesianae*, Ultraieci 1643 (French translation in René Descartes & Martin Schoock, *La Querelle d'Utrecht*, ed. Th. Verbeek, Paris 1988).



ideas to some significant anticipations of his dispositional innatism by medieval and Renaissance authors. The third subsection concludes with a systematic evaluation.

### 1.1. *The dynamics of sense perception*

Descartes did not lay down a definitive theory of perception in any one particular work. The question of how an immaterial mind may gain knowledge of the sensible world returned on many occasions, and was addressed by him from several different angles in the course of his philosophical career, depending on the context in which it was raised. Thus, he sometimes concentrated on physicalist or neurophysiological aspects (as in *Rules for the Direction of the Mind* and *The World*)<sup>13</sup>, while at other times he dwelled on more strictly psychological or cognitive issues (as in *Dioptric* and *Meditations*).

#### 1.1.1. Mind and imagination in the *Rules*

The psychology contained in Descartes' early work, *Rules for the Direction of the Mind*, as compared to his later works, lays less emphasis on the distinction between the purely intellectual powers of the mind and the corporeal imagination. Indeed, here the mind in its pursuit of truth may rely on the senses and on the imagination<sup>14</sup>.

In sensation, the senses, which wholly belong to corporeal reality, are "realiter" affected by the motions of physical objects in the environment<sup>15</sup>. The external senses transmit the motions thus received to the common sense, whence they are impressed upon and recorded by the phantasy<sup>16</sup>. Strictly speaking, these inferior faculties do not *know* anything, since knowing is the prerogative of a

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<sup>13</sup> For discussion, see G. Hatfield, "Descartes' physiology and its relation to his psychology", in *The Cambridge Companion to Descartes*, 335-370.

<sup>14</sup> *Regulae ad directionem ingenii*, AT X, 410-411. Also in later works, Descartes never ruled out this possibility.

<sup>15</sup> *Regulae*, 412: "Concipiendum est igitur, primò, sensus omnes externos, in quantum sunt partes corporis, etiamsi illos applicemus ad objecta per actionem, nempe per motum localem, propriè tamen sentire per passionem tantùm, eàdem ratione quà cera recipit figuram à sigillo."

<sup>16</sup> *Regulae*, 413-14.

spiritual force. Only the mind, when it applies itself ("applicat") to the shapes ("figuras") retained in the phantasy, may develop ideas about the external objects. There is just one cognitive faculty, which may be denominated according to the function it executes in activities such as seeing, feeling, recalling, conceiving, and so on<sup>17</sup>. The mind, which is called a "vis cognoscens", is responsible for all psychological activities; hence, also perception is seen as a typically *mental* phenomenon<sup>18</sup>. In *Rules*, Descartes instituted a hierarchy of mental functions, presuming the imagination to mediate between mind and world in our knowledge and action with regard to corporeal reality<sup>19</sup>. Notice that this view entailed that the intellect may be moved by the imagination, and vice versa<sup>20</sup>.

Although the impact of the new physics was already evident, *Rules* still contained various traces of its Aristotelian antecedents. The intellect is said to receive the "corporum imagines"<sup>21</sup>. Furthermore, the intellect cannot err when it is directed at a single object, whether this is directly present to it or "in phantasmate"<sup>22</sup>. Elsewhere, Descartes made allusions to the presence of "species"

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<sup>17</sup> *Regulae*, 415-416: "Atque una & eadem est vis, quae, si applicet se cum imaginatione ad sensum communem, dicitur videre, tangere, &c; si ad imaginationem solam ut diversis figuris indutam, dicitur reminisci, si ad eandem ut novas fingat, dicitur imaginari vel concipere; si denique sola agat, dicitur intelligere: quod ultimum quomodo fiat, fusiùs exponam suo loco." See also Buridan's 'functionalism', discussed in ch. IV, § 3.2, and Cusanus' view of the mind as unique cognitive "vis", examined in ch. VI, § 1.1. Cf. in particular Bruno, *Sigillus sigillorum*: "una igitur simplex essentia unius primae totalis et simplicis est efficaciae, quam in subiecto dividi, distingui et multiplicari necessum est, et unum idemque diversas a diversis actibus accipere denominationes, ut dicatur: sensus in se sentit tantum, in imaginatione persentit etiam se sentire; sensus quoque, qui iam quaedam imaginatio est, imaginatur in se, in ratione imaginari se percipit; sensus, qui iam ratio est, in se argumentatur, in intellectu animadvertit se argumentari; sensus, qui iam intellectus, in se intelligit (...)." See also *Meditationes*, AT VII, 71-72: the imagination is the cognitive faculty applying itself to the body in order to imagine; see below. This view is surprisingly similar to the noetics of Simplicius and his Renaissance follower Marcantonio Genua; cf. ch. VIII, § 1.

<sup>18</sup> See also *Meditationes*, 34: bodies are perceived "a solo intellectu"; cf. p. 132 and also p. 178, where "imaginari" is defined as "ideam habere".

<sup>19</sup> For discussion of the function of the imagination in Descartes' early works, see D.L. Seppe, "Ingenium, memory act, and the unity of imaginative knowing in the early Descartes", *Essays in the Philosophy and Science of René Descartes*, ed. St. Voss, Oxford 1993, 142-161.

<sup>20</sup> *Regulae*, 416.

<sup>21</sup> *Regulae*, 416.

<sup>22</sup> *Regulae*, 423. The same view of the infallibility of single ideas would return in *Meditations*; see *infra*. For Aristotle, see vol. I, Introduction, and ch. I, § 1.3.

in the phantasy<sup>23</sup>. For a more clear-cut rupture with Peripatetic psychology we must turn to the *Dioptric* and later writings.

### 1.1.2. The polemics with the species doctrine in the *Dioptric*

Descartes' mechanistic research programme dictated that all aspects of the corporeal world should be explained in terms of size, shape, position, and motion of matter and of its parts. Rather than turning to the world at large in astronomy (as present-day readers would be prone to expect), Descartes set his hopes on optics for establishing the scheme of mathematical mechanicism<sup>24</sup>. This pre-occupation with optics was arguably a continuation of the venerable idea that optics is somehow a privileged science, a tradition that ranged from Alhazen and medieval perspectivistic optics to Kepler<sup>25</sup>.

The *Dioptric* gave a mechanistic account of light and of visual physiology, thereby setting the framework for a new, revolutionary theory of perception. The transmission of light and the physiological processes underlying visual perception are wholly explained in mechanical terms. Descartes sought to account for the properties of perceptual objects exclusively in terms of geometrical properties; he wanted to explain perception in terms of size, shape, and velocity of particles impinging on the sense organs, and in terms of parts of the body transmitting signals to the brain<sup>26</sup>.

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<sup>23</sup> *Regulae*, 440.

<sup>24</sup> One of Descartes' *Essais (Dioptrique)* deals with optical theory; see also the subtitle of *Le monde: Traité de la lumière* (first version already completed in 1633, but not published after the condemnation of Galilei). Cf. Theo C. Meyering, *Historical Roots of Cognitive Science. The Rise of a Cognitive Theory of Perception from Antiquity to the Nineteenth Century*, Dordrecht 1989, 68-69.

<sup>25</sup> The same applies to Hobbes and Gassendi. Meyering, *Historical Roots of Cognitive Science*, ch. V, convincingly argues that the mathematization of physics and the mechanization of the world-view had gradually been prepared by the development of medieval optics rather than by that of terrestrial or celestial mechanics.

<sup>26</sup> For discussion, cf. G. Hatfield, "The senses and the fleshless eye: The *Meditationes* as cognitive exercises", in *Essays on Descartes' Meditations*, ed. A. Oksenberg Rorty, Berkeley (L.A.)-London 1986, 45-79, on 58f; see also N.L. Maull, "Cartesian optics and the geometrization of nature", in *Descartes. Philosophy, Mathematics and Physics*, ed. St. Gaukroger, Sussex 1980, 23-40, on pp. 28-30; see also R.M. Adams, "Where do our ideas come from?—Descartes vs. Locke", in *Innate Ideas*, ed. St.P. Stich, Berkeley (L.A.) 1975, 71-87, on p. 75.

According to Descartes, light is the activation or induction to motion of the sun or other luminous bodies, which impels the subtle matter contained in all transparent bodies. Descartes did not have an emission theory of light, nor a wave theory<sup>27</sup>. He believed that light is a sort of pressure exerted by the sun. The physical mechanism of 'pressure lines' extending to the eye he compared to the manner in which a blind man may sense the presence of external objects by dint of their resistance to the poke of a stick:

Et pour tirer une comparaison de cecy, ie desire que vous pensiés que la lumiere n'est autre chose, dans les corps qu'on nomme lumineux, qu'un certain mouvement, ou une action fort prompte & fort vive, qui passe vers nos yeux, par l'entremise de l'air & des autres corps transparens, en mesme façon que le mouvement ou la resistance des corps, que rencontre cet aveugle, passe vers sa main, par l'entremise de son baston.<sup>28</sup>

Light is not a material emission, nor are perceptual qualities material entities penetrating the sense organs and the soul; they are rather tendencies toward motion, which cause effects in the nervous system. To explain our perception of colours and of light, it is not necessary to invoke a material entity transmitted from object

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Meyerling *Historical Roots of Cognitive Science*, 78, observes that the *Dioptric* contains an empirical theory of justification showing that our innate geometrical notions have objective validity and applicability by virtue of the specific mode of operation (the 'natural geometry') of our optical apparatus. For the perception of sensible qualities, see J.V. Buroker, "Descartes on sensible qualities", in *Journal of the History of Philosophy* 29(1991), 585-611; M.D. Wilson, "Descartes on the perception of primary qualities", in *Essays in the Philosophy and Science of René Descartes*, 162-176. For the distinction between primary and secondary qualities, see *Principia*, AT VIII.1, 322-23.

<sup>27</sup> See *Dioptrique*, AT VI, 118, and 88: light is a "tendency to move". For discussion, see G. Buchdahl, *Metaphysics and the Philosophy of Science. The Classical Origins: Descartes to Kant*, Oxford 1969, 97f.

<sup>28</sup> *Dioptrique*, 84. Cf. p. 134 for the reduction of vision to touch; for discussion of the context, see J.J. Macintosh, "Perception and imagination in Descartes, Boyle, and Hooke", in *Canadian Journal of Philosophy* 13(1983), 327-52, on 349. The staff metaphor had already been used by Plotinus, *Enneads*, IV.5.4, for the intermediate light used by the eyes to touch things; for discussion, see E.K. Emilson, *Plotinus on Sense-Perception*, Cambridge 1988, 42-43, and for the systematic background of this view: *Timaeus*, 45d-e. For vision as touch, see also Augustine, *De quantitate animae*, XXIII, 43, 44. According to Leibniz, Descartes borrowed his stick metaphor from Simplicius; see Leibniz, *Philosophische Schriften*, Band IV, 305; see also Petrus Gassendi, *Opera*, 6 vols., Lyon 1658, vol. II, 371A-B. See already the positions developed by Telesio and Campanella, examined in VIII, § 3.2 and 5.

to eye, nor even to assume that the object should resemble our ideas or sensations of it<sup>29</sup>. Rejecting the need of a resemblance between external object and mental content, the mechanistic account of perception invalidates the doctrine of species, for the latter, as Descartes observed, postulated the existence of flying images resembling the external object, originating from the object and mediating between soul and world<sup>30</sup>.

To explain perception, all we need to assume is that impressions made by objects on the external organs are transmitted to the soul in the brain through the nerves<sup>31</sup>. Indeed, only the soul may perceive objects<sup>32</sup>. External objects cause motions in the sensory organs, triggering a complex pattern of motions; once these motions reach the brain, they occasion the soul to perceive the various qualities of the object<sup>33</sup>.

In the sixth book of *Dioptric*, Descartes worked out the contrast between the Scholastic doctrine of species and his own psychology of cognition. According to Descartes, there is no need for the soul to contemplate images originating from the object, or least such 'images' should be understood in a totally different way<sup>34</sup>. Scholastics postulating a resemblance between species and object were unable to explain the production, transmission, and reception

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<sup>29</sup> *Dioptrique*, 85.

<sup>30</sup> *Dioptrique*, 85: "Et par ce moyen vostre esprit sera delivré de toutes ces petites images voltigeantes par l'air, nommées des *especies intentionnelles*, qui travaillent tant l'imagination des Philosophes." The interpretation of the (sensible) species by Descartes seems to have been modeled essentially on the Democritean and Epicurean *eidola* or effluences; see ch. I, § 1.1 and 1.3.1. For a similar reduction, see Malebranche, in ch. XIII, § 1. Notice that Descartes still used the term "species" in *Regulae*, XIV, AT X, 440, l. 29.

<sup>31</sup> *Dioptrique*, 109-111; see also *Discours de la Méthode*, 55 and *Passions de l'ame*, AT XI, 338, on animal spirits. Warmth and the animal spirits account for all man's activities, except those of the rational soul; cf. AT I, 403. For the background of the doctrine of the animal spirits in Descartes, see D.W. Hamlyn, *Sensation and Perception. A History of the Philosophy of Perception*, London 1961, 57; A.C. Crombie, *Robert Grosseteste and the Origins of Experimental Science 1100-1700*, Oxford 1953, 109; MacIntosh, "Perception and imagination in Descartes, Boyle, and Hooke", 332.

<sup>32</sup> *Dioptrique*, 109.

<sup>33</sup> *Dioptrique*, 114. For the historical background of Descartes' views of occasional causes, see R. Specht, *Commercium mentis et corporis. Über Kausalvorstellungen im Cartesianismus*, Stuttgart-Bad Cannstatt 1966, 3-4, 22-42.

<sup>34</sup> See the reinterpretation of the (sensible) species by Emanuel Maignan and Louis de la Forge in ch. XII, § 3.1-2.

of these sensible species<sup>35</sup>. Moreover, the view of the soul as a "tabula rasa" receiving impressions is unacceptable, for it does not account for the presence of signs and words in the mind<sup>36</sup>. In general, mental representation requires at most a merely partial or structural resemblance between idea and object, while often an adequate representation *ipso facto* excludes any resemblance at all. The view of images received in the brain may be accepted only on condition that no (strict) resemblance between object, brain image, and *mental* image is assumed<sup>37</sup>. The physiology of sensation, conceived as a chain of motions, entails that information is registered in the brain in the form of signs or symbols, rather than as something like a perfect resemblance with the object from which the sensation arises<sup>38</sup>.

By virtue of their origin in bodily motion, retinal images may penetrate the brain and eventually reach the pineal gland, which is the seat of the common sense<sup>39</sup>. Descartes elsewhere came close to suggesting that the mind may contemplate the brain patterns on the pineal gland<sup>40</sup>. In the *Dioptric*, however, the propagation of im-

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<sup>35</sup> *Dioptrique*, 112. Notice that Campanella emphasized the same points in his critique of the species; see ch. VIII, § 3.5.

<sup>36</sup> See also *AT* II, 598, for the limitations of the comparison between brain and wax. The wax metaphor for the soul's memory was already rejected by Plato, *Theaetetus*, 191c-d, and by Plotinus, *Enneads*, IV.6.

<sup>37</sup> *Dioptrique*, 112-113. For discussion, see J.W. Yolton, "On being present to the mind: A sketch for the history of an idea", in *Dialogue* 14(1975), 373-388, on 384-85; see also O'Neil, *Epistemological Direct Realism*, 48f, on the rejection of sensible species.

<sup>38</sup> Cf. also *Le Monde*, in *AT* XI, 3-5. See also the interpretation of Cartesian ideas by J.W. Yolton, *Perceptual Acquaintance from Descartes to Reid*, 23f; cf. subsection 1.3.

<sup>39</sup> *Dioptrique*, 129. For the function of the pineal gland, see *AT* III, 18, 263; *L'Homme*, in *AT* XI, 176-77; *Passions*, 351-60. For a first orientation in the context of the discussion, see, inter alia, G. Rodis-Lewis, "Le dualisme platonisant au debut du XVIIe siècle et la révolution cartésienne", in *Rivista di storia della filosofia* 43(1988), 677-96, on p. 692. For discussion of some problematic points regarding the soul exercising its functions in the gland, see B. Williams, *Descartes. The Project of Pure Enquiry*, London 1978, 289-92; St. Voss, "Simplicity and the seat of the soul", in *Essays in the Philosophy and Science of René Descartes*, 128-141.

<sup>40</sup> *L'Homme*, 176-77: "Or, entre ces figure, ce ne sont pas celles qui s'impriment dans les organes des sens extérieurs, ou dans la superficie intérieure du cerveau, mais seulement celles qui se tracent dans les esprits sur la superficie de la glande H, où est le siege de l'imagination, & du sens commun, qui doivent estre prises pour les idées, c'est dire pour les formes ou images que l'ame raisonnable considerera immediatement, lors qu'estant unie à cette machine elle imaginera ou

ages in the brain did not entail anything like an inner eye to perceive these patterns<sup>41</sup>. The pineal gland is just a sort of meeting-point where soul and body intermingle in such a way that the force and character of brain motions cause the mind to token corresponding sensations and perceptual ideas<sup>42</sup>.

Descartes distinguished between two ways in which resemblance in perception is lacking. First, between the properties of external objects and the motions and patterns in the brain: here there is at most a minimal similarity in a structural sense of the word. Descartes emphasized that the important point here is that corporeal representations in the brain should be able to capture the complexity of the information conveyed. Secondly, between the ideas and the motions that cause them to be produced there is no resemblance at all<sup>43</sup>.

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sentira quelque objet." (Notice that a first version of *Traité de l'Homme* was finished in 1633, but this work had been profoundly revised and enlarged by 1646.) Also the use of the Augustinian (and Ficinian) expression of an "acies mentis" (see *Meditationes*, p. 51) suggests the existence of a fleshless eye; for Augustine's cognitive psychology, see ch. III, § 1. Notice that, unlike the ancient Sceptics, Descartes did not argue for the unreliability of the perceptual knowledge as depending on the *mediation* between sensible reality and the mind. The Cyrenaic school, founded in the 4th century B.C. by Aristippus, thought that nothing was apprehensible but one's own affections; cf. Sextus, *Adv. Math.*, VII.191f. Subsequently, the Sceptics cast doubt on the ability of the senses to reliably report on external objects. In this context, see also the position of Campanella, who defined sense experience as a "perceptio passionis"; see ch. VIII, § 3.5.

<sup>41</sup> *Dioptrique*, 130.

<sup>42</sup> *Dioptrique*, 130: "mais plustost, que ce sont les mouvemens par lesquels elle est composée, qui, agissans immediatement contre nostre ame, d'autant qu'elle est unie a nostre cors, sont institués de la Nature pour luy faire avoir de tels sentimens." Cf. G.C. Hatfield and W. Epstein, "The sensory core and the medieval foundation of early modern perceptual theory", in *Isis* 70(1979), 363-384, on p. 375.

<sup>43</sup> *Dioptrique*, 131. In *Meditationes*, 440-41, the resemblance theory is considered as a remnant of childish prejudice; cf. Hatfield, "The sense and the fleshless eye", 60. In general, the resemblance between ideas and objects would imply that the former have the same formal reality as the latter; for discussion, see M. Cook, "Descartes' alleged representationalism", in *History of Philosophy Quarterly* 4(1987), 179-195, on 188. However, *L'Homme*, 174, suggests that motion in the pineal gland produces ideas. For the significance of the detachment between representation and resemblance in the scientific research, see Ch. Larmore, "Descartes' empirical epistemology", in *Descartes. Philosophy, Mathematics, and Physics*, 6-22, on p. 15.

What is the relationship between Descartes' account of perception and the Scholastic doctrine of intentional species? First of all, it is important to realize that Descartes destroyed the intentional species by ridiculizing only *sensible* species, depicting the latter as 'flying little images'. As is well-known, Aristotelian physics prohibited the transfer of accidents from one subject to another. It was therefore very hard to explain the production of sensible species and their reception in the sense organs. Indeed, most Peripatetics endorsing sensible species maintained that they were "propagated" through the medium, the sense organs, and the senses. Strictly speaking, this propagation should not be seen as a real transmission of impressions, but rather as a process of successive actualizations of the potentials of the various media involved, that is, more like the propagation of a wave<sup>44</sup>. Descartes was obviously disinclined to take this aspect of the doctrine into consideration, preferring as he did to magnify the differences between his own view and that of the schoolmen by using a caricature of the latter<sup>45</sup>. In addition to this comment on sensible species, a second remark about Descartes' quarrel with Scholastic psychology is in order here, concerning the fact that Descartes was absolutely silent about *intelligible* species<sup>46</sup>.

Comparing the perception theory in *Dioptric* with Scholastic accounts, the following parallels between doctrinal elements can be noticed. The primary perceptual object of traditional philosophy has lost most of its intrinsic qualities, which are reduced to a number of geometrical properties. The propagation of species through medium and senses is replaced by a complex of motions that bears no direct resemblance to its cause. Where sense perception for the Peripatetics had eventuated in the production of the phantasm by the inner senses, for Descartes the end term was a brain state, the

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<sup>44</sup> See, for example, the position of one of the main inceptors of the species doctrine, Roger Bacon (ch. II, § 2.3); cf. also the position of Eustachius of Saint-Paul, whose work was known by Descartes, discussed in ch. X, § 2.2.2.

<sup>45</sup> Also O'Neil, *Epistemological Direct Realism*, emphasizes on pp. 48-49 and 65-66, that Descartes like many followers of Aquinas (such as Eustachius) misunderstood the Thomistic theory of sensible species, interpreting the species as Democritean *eidola*; cf. also E. Gilson, *Études sur le rôle de la pensée médiévale dans la formation du système cartésien*, 20-27.

<sup>46</sup> I think that this aspect is not sufficiently accounted for by authors who study Descartes' relation with Scholastic psychology; see also subsection 1.3 below.



effect on the pineal gland of motions and patterns communicated through the nervous system. To bridge the gap between sense perception and intellectual knowledge, many Scholastics had postulated an intelligible species, abstracted by the agent intellect, and purveying to the possible intellect an integrated representation of information from the senses. Notice that the intelligible species was indeed presumed to resemble its object, but that most Scholastics saw this resemblance as abstract and structural, rather than as pictorial or iconic. Seen in this light, Descartes' blunt rejection of species (without qualification) as corporeal, image-like entities appears to be overhasty, if it was not a deliberate distortion of the truth.

The formal mediation in intellectual knowledge by means of species was not universally accepted. Ever since Henry of Ghent, critics of the intelligible species had presumed that the human mind is capable of directly grasping the intelligible kernel of material reality, accessible through the phantasms. Descartes' position resembled this view in a number of ways. The mind's production of ideas is based on an intimate link between the immaterial mind and the physiological gland. Moreover, just like Scholastic critics of the intelligible species had been unable to explain the direct grasp of the essence in the phantasm, so also Descartes was unable to explain how the pineal gland may convey its information to the mind. The perception of sensible qualities, whether primary or secondary, is the mysterious result of the mysterious interaction between mind and body<sup>47</sup>.

Because perception is a *mental* event, according to Descartes, the motions and patterns in the brain replace not only the sensible species and the phantasms, but also the intelligible species. Aristotle and his followers had thought that perception (and cognition generally) require a non-mechanistic phenomenon taking place in the senses, namely the reception of the form without mat-

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<sup>47</sup> According to Descartes, we can assert *that* mind and body interact without knowing *how* they interact. Rather enigmatically, St.J. Wagner, "Mind-body interaction in Descartes", in *Essays on the Philosophy and Science of René Descartes*, 115-127, argues that it is the *power* of minds and bodies, rather than their modes, that is the ground of their interaction.

ter<sup>48</sup>. Descartes replaced this by the mind's non-mechanistic 'reading off' or 'attending to' patterns in the pineal gland. Like the advocates of intelligible species, Descartes never doubted that the mind has reliable 'contact' with the essential nature of the world. Similarly, he did not look upon the patterns on the pineal gland as being perceptual objects themselves: brain patterns have a strictly instrumental function, namely, to trigger or to occasion the production of ideas in the human mind<sup>49</sup>.

Also with regard to the modalities of knowledge production there are striking similarities to be found between Descartes' account of the origin of perceptual ideas and the views of some Scholastic and Renaissance authors regarding the production of intelligible species. I turn to this topic in the next subsection.

### 1.1.3. Perceptual knowledge in the *Meditations*

In the *Meditations*, Descartes refined his views on the cognitive aspects of sense perception and on the status of perceptual ideas. Here, as elsewhere, his dualistic psychology was not meant to ex-

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<sup>48</sup> The reception of the form without matter means that the soul becomes in form equal to the sensible object. Notice that no forms flit from the objects to the sense organs. In Aristotle's view, actualizations of the senses are the causal result of the action of perceptual objects, although nothing material as such penetrates the soul. See ch. I, § 1.3.

<sup>49</sup> I agree with Th.M. Lennon, "The inference pattern and Descartes' *Ideas*", in *Journal of the History of Ideas* 12(1974), 43-52, who on p. 52 characterizes the representationalist reading of Descartes' perception theory as unwarranted by the texts; cf. also R. Arbini, "Did Descartes have a philosophical theory of sense-perception?", in *Journal of the History of Philosophy* 21(1983), 317-337, who on p. 330 observes that Descartes endorsed a causal, not a representationalist view of knowledge. Also Th.M. Lennon, "Representationalism, judgment and perception of distance: Further to Yolton and McRae", in *Dialogue* 19(1980), 151-162, remarks on pp. 151-154 that Descartes gave us a relatively simple account of perception, but that the essential details of this account rest on theories from either side of the representationalist issue; Descartes left it an open question whether sensible objects are perceived directly or indirectly. See also Cook, "Descartes' alleged representationalism", 182: Descartes defended a causal theory of knowledge, not a representational one. However, Larmore, "Descartes' empirical epistemology", 19, correctly observes that perceptual experience has indirect access to the actual structure of nature; cf. also Maull, "Cartesian optics and the geometrization of nature", 30.

clude the 'contact' between mind and body<sup>50</sup>. He subscribed to the typically Platonic view that the images of sensible things may blind the mind<sup>51</sup>. Moreover, he rejected the traditional image of the soul as sailor and the body as ship<sup>52</sup>, emphasizing instead the "permixtio" and "conjunctio" between the two, that is, their blending in the pineal gland. A concrete example of this intimate connection is the imagination, which he characterized here (as in the *Rules*) in terms of an interaction between mind and body. Perceptual ideas are not caused by bodies<sup>53</sup>, but they arise when the mind "applies" itself to the body<sup>54</sup>. Intellectual conception requires that the mind 'returns' into itself, however<sup>55</sup>.

In his *Replies* to the *Objections* by Gassendi, Descartes once more explained his view of the *mental* status of perception. Ideas, which represent the essence of things, should not be confused with the images depicted in the phantasy<sup>56</sup>. For the mental perception of sensible reality no bodily species are needed. Such species may at best exist in the imagination, but they are not received in the intel-

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<sup>50</sup> For a valuable correction of the standard view of Cartesian dualism, see G.P. Baker and K.J. Morris, "Descartes unlocked", in *British Journal for the History of Philosophy* 1(1993), 5-27.

<sup>51</sup> *Meditationes*, 47.

<sup>52</sup> *Meditationes*, 80-81, 86. See also *Discours de la Méthode*, 59. Thomas ascribed this view to Plato; cf. *Summa contra Gentiles*, II, c. 57, 1327; cf. also Aristotle, *De anima*, 413a8-9: "It is also uncertain whether the soul as an actuality bears the same relation to the body as the sailor to the ship." The metaphor was also used by Plotinus, *Enneades*, IV.3.21; Ficino, *In Enneades*, VI.7.5-6, in *Opera*, 1788; and by Giordano Bruno, *De la causa, principio et uno*, 71; *Spaccio della bestia trionfante*, in *Dialoghi italiani*, 555-557; *De gli eroici furori*, 1092; *Oratio valedictoria*, in *Opera latine conscripta*, vol. I.1, 14; *Lampas triginta statuarum*, in *Opera*, vol. III, 246 and 253.

<sup>53</sup> See also *Passions*, 342-346, where Descartes criticized the subjective impression that external bodies cause our perceptual ideas.

<sup>54</sup> See *Meditationes*, 75 and 79, and also AT III, 475, for the active origin of the ideas concerning sensible reality. For the Neoplatonic background of this view in Plotinus and others, see ch. 1, § 2. On the relationship between mind and body in recalling, see AT III, 425, and IV, 114, where Descartes observed that the brain traces condition memory.

<sup>55</sup> Cf. *Meditationes*, 71-73. For the distinction between understanding and imagination, see AT III, 361: "Formae sive species corporeae, quae esse debent in cerebro ut quid imaginemur, non sunt cogitationes; sed operatio mentis imaginantis, sive ad istas species se convertentis, est cogitatio." Cf. also AT V, 154 and *Meditationes*, 384-85.

<sup>56</sup> *Meditationes*, 363-64, and 371; cf. 367, II. 12-18, on the illusion that sensible things are causally responsible for our perceptual ideas. Cf. AT III, 361 (quoted above).

lect<sup>57</sup>. Notice that here, too, Descartes did not consider the possibility of *intelligible* species, but simply rejected all (sensible) species as entities impinging on the soul. In this case, however, the context of the discussion played a crucial role, for Gassendi admitted only the existence of bodily species<sup>58</sup>.

In the *Replies* to the *VI<sup>th</sup> Objections*, Descartes made a distinction between three grades or stages of perception<sup>59</sup>. The first stage consists in the physical contact between the object, or certain emanations from the object, and the appropriate sense organ. The effect of this affection is transmitted to the brain by the nervous system. A sort of structural isomorphism is supposed to hold between the initial effect of the perceived object on the sensory organ and the eventual effect on the perceiver's brain. The second stage consists in the mind's immediate response to these motions and patterns in the brain, due to the intimate union between mind and parts of the brain. No intentional species are needed here, because the brain may coax a response from the mind without introducing anything into it. The inexplicable unity of mind and body makes it possible for the mind to token the appropriate ideas or intellectual representations on the occasion of appropriate brain activity. The third and final stage consists in the formation of a perceptual judgment<sup>60</sup>.

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<sup>57</sup> *Meditationes*, 385-387, in particular p. 387: "Respondeo nullam speciem corpoream in mente recipi, sed puram intellectionem tam rei corporeae quam incorporeae fieri absque ullâ specie corporeâ. Ad imaginationem verò, quae non nisi de rebus corporeis esse potest, opus quidem esse specie quae sit verum corpus, & ad quem mens se applicet, sed non quae in mente recipiatur."

<sup>58</sup> See below, § 3.1.

<sup>59</sup> *Meditationes*, 436-37. For discussion, see, inter alia, Hatfield and Epstein, "The sensory core and the medieval foundation of early modern perceptual theory", 376; Arbini, "Did Descartes have a philosophical theory of sense-perception?", 23.

<sup>60</sup> Cf. *Notae in programma quoddam*, 363: perception is prior to judgment. However, in *Meditationes*, 30-32, perception is assimilated to judgment. For discussion, see F. Van de Pitte, "Intuition and judgment in Descartes' theory of truth", in *Journal of the History of Philosophy* 26(1988), 453-70. In general, Descartes held that perception is unencapsulated, since knowledge influences and corrects perceptual judgments concerning those very properties of matter which are subject of the *Meditations'* sceptical arguments; see Arbini, "Did Descartes have a philosophical theory of sense-perception?", 328. Indeed, metaphysics and pure mathematics reveal what kind of properties can be used in constructing hypotheses. Objects of geometry defy the imagination's representational power. Sensory observation and experiment must be used to determine which of the math-

The first stage of perception, as described by Descartes, is not very different from the Aristotelian account of how sensation arises when the sense organs are affected in appropriate ways. A substantial difference appears at the second stage, however. Descartes' second stage seems to comprise both perception and simple apprehension, as Peripatetics understood these terms. Indeed, Descartes apparently collapsed sensational and non-sensational perception, as may be gathered from the famous thought experiment of the wax-tablet in the Second Meditation<sup>61</sup>. Notice that truth and falsity do not apply at the first two stages<sup>62</sup>. Peripatetics had claimed the same for perception of sensibles pertaining to specific senses, and for the mind's simple apprehension of an individual essence. This brings us to the conclusion that a comparison between Cartesian perception and intelligible species must concentrate on the second stage, which consists in the production of a perceptual idea, as we shall see below.

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emational constructions fit the actual order of things. For the importance of experimental science in Descartes, cf. *AT* III, 692-93; for discussion, see: D.M. Clarke, *Descartes' Philosophy of Science*, Manchester 1982; Hatfield, "The senses and the fleshless eye"; and Buchdahl, *Metaphysics and the Philosophy of Science*, 97f.

<sup>61</sup> *Meditationes*, 29-34. See, for example, the definition of perception as "solius mentis inspectio" (p. 31); cf. also *Principia*, 17, where perception is characterized as "operatio intellectus". For general discussion, see M. Gueroult, *Descartes selon l'ordre des raisons*, 2 vols., Paris 1953, vol. I, 127-131, and 149; D.W. Hamlyn, *Sensation and Perception*, 66. Valuable specific studies are: J.-M. Beyssade, "L'analyse du morceau de cire. Contribution à l'étude des «degrés du sens» dans la Seconde Méditation de Descartes", in *Sinnlichkeit und Verstand in der deutschen und französischen Philosophie von Descartes bis Hegel*, ed. H. Wagner, Bonn 1976, 9-25; J. Pacho, "Über einige erkenntnistheoretische Schwierigkeiten des klassischen Rationalismus. Überlegungen anhand eines cartesianischen Beispiels", in *Zeitschrift für philosophische Forschung* 38(1984), 561-581. See also: Cook, "Descartes' alleged representationalism", 188-89; Clarke, *Descartes' Philosophy of Science*, 32. In the context of the thought-experiment regarding the wax-tablet, Descartes apparently also collapsed simple apprehension and judgment; cf. in particular *Meditationes*, 32. The view of judgment as not distinct from simple apprehension was already formulated by Bonaventure (ch. II, § 1.7), Cusanus (ch. VI, § 1.1), Zabarella and Piccolomini (ch. IX, § 1.1 and 3).

<sup>62</sup> *Meditationes*, 438. Single ideas are authentic or not, rather than true or false; cf. *AT* V, 152. The truth of an idea can be established only by comparing it to other ideas; this is the only reasonable interpretation of the abstraction of the intellect; cf. *AT* III, 474. For discussion, see A. Danto, "The representational character of ideas and the problem of the external world", in *Descartes: Critical and Interpretive Essays*, ed. M. Hooker, Baltimore 1978, 287-97, on pp. 289, and 295-7.

## 1.2. *The origin and nature of perceptual ideas*

### 1.2.1. Idea: act and content

According to Descartes, ideas are primarily modes of thought with representational content<sup>63</sup>. In the *Meditations*, Descartes justified his use of the term “idea” with reference to the Scholastic view of ideas as contents of the divine mind<sup>64</sup>. Yet, the background of his view of ideas as divine or human thoughts cannot be restricted to Scholastic sources only, neither terminologically nor doctrinally, since many Renaissance philosophers used the term in a similar sense<sup>65</sup>. In Descartes, it is often hard to make any clear-cut distinction between innate principles, notions, ideas, and concepts<sup>66</sup>. Ideas, like thoughts, cover a broad range of phenomena in his work, and Descartes himself admitted that he used the term ‘idea’ equivocally<sup>67</sup>. Thus, he used it to describe mental events (acts) as

<sup>63</sup> See *Meditationes*, 37 and 40.

<sup>64</sup> *Meditationes*, 181. See, for example, Thomas, *Summa theologiae*, I, q. 15, a. 1 and 3; for discussion, see Gilson, *Études*, 27f.

<sup>65</sup> See, for example, Ficino, Polo, Bruno, and Agnello. Notice that Plato rejected the identification of idea with *noema* in *Parmenides*, 132b. For discussion of the Stoic interpretation of the Platonic ideas as thought and the Neoplatonic refutations, see ch. I, § 4.1. For the role of neo-Stoicism and the revival of Platonism in the developments of early 17th-century innatist and dualist views on knowledge, see G. Rodis-Lewis, “L’arrière-plan platonicien du débat sur les idées: de Descartes à Leibniz”, in *Permanence de la philosophie*, Neuchâtel 1977, 221-40, and “Le dualisme platonisant au début du XVIIe siècle et la révolution cartésienne”, 678-684.

<sup>66</sup> See AT III, 392-393: idea stands for whatever is in the mind. Cf. A. Hart, “Descartes’ «notions»”, in *Philosophy and Phenomenological Research* 31(1970-71), 114-122, on p. 116f; N. Jolley, *The Light of the Soul. Theories of Ideas in Leibniz, Malebranche, and Descartes*, Oxford 1990, 48. See Pacho, “Über einige erkenntnistheoretische Schwierigkeiten des klassischen Rationalismus”, 574 and 580, on the origin of general notions and the relation between ideas and language; see M. Weitz, “Descartes’ theory of concepts”, in *Contemporary Perspectives on the History of Philosophy*, Minneapolis 1983, 89-103, on p. 98, on the conflicting views of concepts in Descartes. For a general discussion of Latin and French terminology concerning ideas, see J.-R. Armogathe, “Sémanthèse d’idée/idea chez Descartes”, in *Idea. VI Colloquio Internazionale del Lessico Intellettuale Europeo*, 187-205.

<sup>67</sup> *Meditationes*, 8. For general discussion, see R. McRae, “Idea as a philosophical term in the seventeenth century”, in *Journal of the History of Ideas* 26(1965), 175-190, on p. 178f; Y. Belaval, “La naissance de la rationalité moderne au XVIIe siècle”, in *Truth, Knowledge and Reality. Inquiries into the Foundations of the 17th-Century Rationalism*, ed. G.H.R. Parkinson, Wiesbaden 1981, 107-114; N. Jolley, *The Light of the Soul*, ch. 2 and 3; F.P. Van de Pitte, “Descartes’ innate

well as the cognitive contents associated with them; in his early work he also seemed to use it for images<sup>68</sup>; in *Comments on a Certain Broadsheet* he regarded it as a faculty or disposition<sup>69</sup>. In the following paragraphs, I examine some aspects of Descartes' view of the nature of ideas about the sensible world.

Perceptual ideas are primarily mental events representing external objects. Some ideas are like images, in the sense that they represent external objects by virtue of an isomorphism between them and the object<sup>70</sup>. But ideas do not have to be images for them to be representations<sup>71</sup>. Indeed, as we have seen, Descartes did not presume any strict resemblance between sensible objects and perceptual ideas<sup>72</sup>. Thus, ideas of the external world should not be seen as images in the proper sense, that is, as brain states<sup>73</sup>.

What about the other characterizations of ideas as act, as cognitive object, and as disposition? Ideas as dispositions were used by Descartes in his discussion of the origin of perceptual ideas. I examine this aspect in more detail in subsection 1.2.3. Descartes' attitude towards ideas as acts or as objects was rather ambiguous<sup>74</sup>. On the one hand, ideas being immediately perceived by the mind, and present to the mind, would seem to be objects<sup>75</sup>. On the other hand, Arnauld convincingly argued that Cartesian ideas are primarily acts, while their being objects is merely an aspect of their

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ideas", in *Kantstudien* 76(1985), 363-384; D. Radner, "Thought and consciousness in Descartes", in *Journal of the History of Philosophy* 26(1988), 439-52.

<sup>68</sup> Cf. *Regulae*, 414 ("figuras vel ideas") and 441, for the view of knowledge as vision or intuition of an immediately present object, and also for the assimilation of the image in the brain and idea. See *L'Homme*, 174-177, 181, 183, 185, and 201.

<sup>69</sup> *Notae in programma*, 361 and 366.

<sup>70</sup> *Meditationes*, 160-161.

<sup>71</sup> *Meditationes*, 71-73, 179-181, and 284-85; for discussion, see Cook, "Descartes' alleged representationalism", 184-187.

<sup>72</sup> *Meditationes*, 37, 39, 42, and 74-75.

<sup>73</sup> See *Meditationes*, 181, and 387-88, for the Replies to the Objections by Hobbes (179-80) and Gassendi (284-85, 337). For discussion, see Cook, "Descartes' alleged representationalism"; and M.J. Costa, "What Cartesian ideas are not", in *Journal of the History of Philosophy* 21(1983), 537-550.

<sup>74</sup> For discussion, see V. Chappel, "The theory of ideas", in *Essays on Descartes' Meditations*, 177-198 and Jolley, *The Light of the Soul*, 16f. E.J. Ashworth, "Descartes' theory of clear and distinct ideas", 89, interprets the ideas as intermediary objects and thus attributes to Descartes a representational view of mind; this interpretation is not warranted by the texts, see above subsection 1.1.2.

<sup>75</sup> Cf. *Meditationes*, 35 and 181.

being events<sup>76</sup>. Arnauld's interpretation is supported by a passage at the beginning of the *Meditations*, where Descartes drew a crucial distinction between ideas in a 'material' or 'formal' sense, and ideas as involving 'objective' reality<sup>77</sup>.

"Materialiter" the idea is a mental operation, that is to say, its 'formal' reality consists in its being a perception<sup>78</sup>. By contrast, 'objectively' the idea is what is represented by it. By 'objective reality' Descartes meant the characteristic mode of existence of things in the intellect<sup>79</sup>. Objective reality regards the thing thought of, not the idea as such<sup>80</sup>. My idea of the sun in the objective sense is the sun insofar as it exists as a cognitive object in my mind. Thus, ideas in the formal sense are 'vessels' or functions for grasping conceivable objects, which are present in the mind as 'objective' realities. Notice that Descartes did not think of the mind as grasping ideas (in the objective sense), but as grasping the object itself rather than some sign of it, mental or otherwise. The content effectively grasped is an aspect of the idea qua actual representation. The distinction between ideas in the material and in the objective sense is therefore a distinction "ratione"<sup>81</sup>.

The qualification of the idea as formal and objective reality reminds of medieval and Renaissance discussions on the

<sup>76</sup> See *Des vraies et des fausses idées*, chap. V; cf. also ch. XIII, § 1.2-4. This interpretation is accepted by Cook, "Descartes' alleged representationalism", 181f, and Jolley, *The Light of the Soul*, 17-19.

<sup>77</sup> *Meditationes*, 8. See also *Principia*, 11.

<sup>78</sup> The characterization of idea as perception and as act seems to conflict with the view, expressed in AT III, 113, that in perception the mind is passive. When Descartes described the idea as act, he intends principally to regard it as a mode of the substance, namely, the mind. For discussion, see V. Chappel, "The theory of ideas", 182-83. According to Gassendi, the formal reality of the idea suggests that the latter is an "entitas"; Descartes did not reply to this objection, but simply denied that ideas are images depicted in the imagination (see above). For discussion, see J.W. Yolton, "Ideas and knowledge in seventeenth-century philosophy", in *Journal of the History of Ideas* 13(1975), 145-165, on p. 152.

<sup>79</sup> See also *Meditationes*, 41 and 103. Notice, that Descartes preferred to speak of formal and objective *reality*, rather than of *being*. Things either exist or they do not exist, but reality may be distinguished in various degrees; cf. *Meditationes*, 165. Moreover, not all objects have 'actual counterparts', as the example of numbers shows.

<sup>80</sup> *Meditationes*, 102. The postulate that the cause of our ideas has the same 'amount of reality' as expressed by the idea, played a crucial role in Descartes' proof of God's existence.

<sup>81</sup> See *Principia*, 28-30, for Descartes' acceptance of the rational distinction.



'subjective' and 'objective' being assigned to cognitive contents or species in the intellect<sup>82</sup>. This invites yet another comparison between the doctrine of intelligible species and the Cartesian theory of ideas.

### 1.2.2. Subjective and objective being: species and ideas

Research on the Scholastic sources for the distinction between objective and formal being in Descartes' theory of ideas has tended to concentrate on major medieval and contemporary Scholastics such as Thomas, Scotus, and Suarez<sup>83</sup>, often emphasizing the possible influence of the latter's distinction between objective and formal concepts<sup>84</sup>. In this subsection I make no attempt at reconstructing all the relevant sources here. My purpose is rather to trace out some generally neglected aspects of the species doctrine that bear on Descartes' distinction between the formal and objective sides of ideas.

In Scholastic cognitive psychology, "esse diminutum"<sup>85</sup> or "obiectivum" was used to indicate the specific mode of being of cognitive objects in the intellect. The expression's origin lies in

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<sup>82</sup> See ch. IV, § 1.5, and in general ch. VI, § 3 and ch. VII.

<sup>83</sup> For a first general discussion, see: E. Gilson, *Études sur le rôle de la pensée médiévale dans la formation du système cartésien*, p. 204f; R. Dalbiez, "Les sources scolastiques de la théorie cartésienne de l'être objectif. A propos du Descartes de M. Gilson", in *Revue d'histoire de la philosophie* 3(1929), 464-72; O'Neil, *Epistemological Direct Realism in Descartes' Philosophy*, ch. III-IV. C. Normore, "Meaning and objective being: Descartes and his sources", in *Essays on Descartes' Meditations*, 223-241, focuses on the doctrines of ideas in Duns Scotus, William of Ockham, and Chatton. Valuable studies on the relationship between Descartes' theory of ideas and the Suarezian doctrine of concepts are: T.J. Cronin, *Objective Being in Descartes and in Suarez*, Roma 1966 (repr. New York 1987); N.J. Wells, "Objective being: Descartes and his sources", in *Modern Schoolman* 45(1967-68), 49-61; J.C. Doig, "Suarez, Descartes and the objective being", in *New Scholasticism* 51(1977), 350-372; N.J. Wells, "Old bottles and new wine: A rejoinder to J.C. Doig", in *New Scholasticism* 53(1979), 515-523; cf. O'Neil, *Epistemological Direct Realism in Descartes' Philosophy*, 75f, for a critical discussion of Cronin's interpretation; see also St.M. Nadler, *Arnauld and the Cartesian Philosophy of Ideas*, Manchester 1989, 147-165.

<sup>84</sup> This distinction was already drawn by Agostino Nifo, *Expositio subtilissima collectanea commentariaque in III libros Aristotelis De anima*, Venetiis 1553, 207ra.

<sup>85</sup> Descartes considered the objective being as being "imperfectior"; cf. *Meditationes*, 103.

early Arab-Latin translations of Aristotle's *Metaphysics*<sup>86</sup>, while it is also connected with the tendency to restrict the scope of the soul-subject thesis, already found in Albert<sup>87</sup>. The expression "esse obiectivum" was known to Thomas, Siger, Henry of Ghent and Godfrey of Fontaines, but it was not since the beginning of the fourteenth century that it was systematically used in a psychological context by Scotus, Hervaeus Natalis and other authors of that time. Hervaeus was one of the first to apply the distinction between 'objective' and 'subjective' existence to cognitive contents and intelligible species. In his *De intellectu et specie*, this Thomist observed that material forms exist "objective" in the human intellect, while the species exist there "in subiecto"<sup>88</sup>. The early Ockham employed the objective being of cognitive objects in his argument against the need for intelligible species<sup>89</sup>. Other medieval authors, defending the species theory, explicitly distinguished between the objective presence of cognitive contents and the subjective inherence of intelligible species as accidents in the intellect. Examples here are Hugolinus of Orvieto and James of Piacenza<sup>90</sup>.

The 'subjective-objective' distinction figured large in Renaissance disputes on the presence of species and cognitive contents in the intellectual soul. Agostino Nifo, after his virulent at-

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<sup>86</sup> For the background of this expression, see ch. IV, § 1.5. For the background of the ontologically hazy status of the species/notion, see Diogenes Laertius' qualification of the Stoic cognitive impression as neither substance nor accident; cf. *Lives*, VII. 61. See also Abelard on mental similitudes (ch. II, § 1.1), Peter of Spain on species (ch. II, § 1.6), and Bruno on shadows (ch. VIII, § 3.3).

<sup>87</sup> Ch. II, § 2.1.

<sup>88</sup> *De intellectu et specie*, in P. Stella, "La prima critica di Hervaeus Natalis O.P. alla noetica di Enrico di Gand: il *De intellectu et specie* del cosiddetto *De quatuor materiis*", in *Salesianum* 21(1959), 125-170, on p. 162; see also p. 164: the "entia realia" exist as universals according to an "esse obiectivum" in the soul. The expression "esse obiectivum" also recurred in *Quodlibetum*, III, q. 1, c, in *Quodlibeta*, Venetiis 1513, 68rb.

<sup>89</sup> According to Ockham only mental acts have formal (subjective) being; see ch. IV, § 1.5 and § 3.1.

<sup>90</sup> Cf. *Lectura super III de anima*, in Jacques de Plaisance, *Quaestiones super tertium de anima*, ed. Z. Kuksewicz, Wrocław-Varsovie-Cracovie 1967, p. 262: "Nota, quod lapis est in anima obiective, sed species lapidis est in anima subiective, licet non formaliter, ergo etc." See also Hugolinus de Urbe Veteris, *Commentarius in quattuor libros Sententiarum*, tomus tertius, ed. W. Eckermann & V. Marcolino, Würzburg 1986, 254 (quoted in ch. IV, § 3.5).

tack on the species doctrine in *De intellectu*, accepted the intelligible species in his *De anima* commentary as a notion existing “objective” in the intellectual soul<sup>91</sup>. Marcantonio Zimara subsequently argued that the cognitive object cannot be present “objective” in the mind, unless this specific presence is based on the ‘subjective’ reception of intelligible species, which is required as a vehicle for presenting the cognitive object to the mind<sup>92</sup>. Zimara thus accepted Peripatetic physicalism as a framework for cognitive psychology (as is clear from the requirement of a ‘subjective’ reception of species), but he did not exclude that human knowledge has aspects that transcend this framework, such as the objective presence of contents in the intellect. Notice, however, that the very notion of objective being for cognitive objects is *born* from a physicalist approach to cognition.

A similar (but more puzzling) use of the ‘subjective-objective’ idiom is found in Caietanus, who applied it to the illumination by the agent intellect, and to the distinction between intelligible species (‘formally’ intelligible) and “quidditas” (‘objectively’ intelligible)<sup>93</sup>. The distinction also recurred in Zabarella and in later Scholastics such as Petrus Martinez<sup>94</sup>.

Scholastics used “esse obiectivum” to indicate an ontological aspect of the mental realm that set it apart from physical reality. It indicated the ‘diminished’ reality of psychological items to which the ‘normal’ Aristotelian inherence of subject and accident did not apply. It is true that Descartes accepted the inherence pattern for ideas<sup>95</sup>, but his ideas were modes rather than accidents. He used the term ‘material’ (frequently also ‘formal’) to indicate the idea’s

<sup>91</sup> In *De anima*, 157rb, 162vb, 206va.; for discussion, see ch. VI, § 3.3.

<sup>92</sup> *Quaestio de speciebus intelligibilibus*, Bv<sup>r</sup>; for discussion, see ch. VII, § 1.2.

<sup>93</sup> See ch. VII, § 2.1.

<sup>94</sup> Cf. ch. IX, § 1.1, and X, § 1.2.

<sup>95</sup> See Th.M. Lennon, “The inherence pattern and Descartes’ ideas”, in *Journal of the History of Philosophy* 12(1974), 43-52. See also R.A. Watson, *The Breakdown of Cartesian Metaphysics*, Atlantic Highlands (N.J.) 1987 (a revised version of the author’s *The Downfall of Cartesianism 1673-1712*, The Hague 1966), 23: “(...) the Cartesians have a notion of a mind’s being directly acquainted with ideas that makes direct acquaintance dependent upon or identical with the relation of a substance to its modifications”. However, Watson fails to do full justice to the fact that the very concept of objective being entails a partial rupture with the Aristotelian, physicalist approach to psychology.

'real' being. However, this qualification described the idea as an operation. Finally, the objective reality of ideas in Descartes is not something 'real', but, as far as real existing objects are concerned, an extrinsic connotation, indicating their being represented in ideas<sup>96</sup>.

Descartes' use of traditional terminology does not imply that he depended in any direct way on Peripatetic philosophy<sup>97</sup>. Still, his views on ideas arose in a philosophical context that was dominated by Scholastic views, and there are many, often very substantial parallels between the Cartesian theory of ideas and medieval and Renaissance views on intelligible species. An important difference between Descartes' theory and the 'positive' doctrine of intelligible species<sup>98</sup> is that Descartes did not distinguish between representational principle (intelligible species) and known content (quidditative essence). Ideas are just mental events or mental acts with representational content. It is all the more remarkable, then, to find that Descartes' view of ideas as representational *acts* substantially resembled the view of certain critics of the Thomistic doctrine of intelligible species who identified the species with mental acts<sup>99</sup>.

Also other conceptual links between Cartesian ideas and intelligible species should be mentioned here. Some Renaissance Aristotelians interpreted the intelligible species as "notio", which translated the Aristotelian *noema*, meaning (primary) thought<sup>100</sup>.

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<sup>96</sup> Cf. "Reply to Caterus", in *Meditationes*, 102-103. According to Descartes, we may speak of the "objective reality" of ideas that do not represent existing objects.

<sup>97</sup> Cf. *Regulae*, 369, where Descartes warned the reader that he did not use the terms in their original Scholastic meaning.

<sup>98</sup> For an outline of this doctrine, see vol. I, Introduction.

<sup>99</sup> See, e.g., Godfrey of Fontaines (ch. III, § 3.3), Radulphus Brito (ch. III, § 3.5), Thomas Sutton (ch. IV, § 1.4), and John Baconthorpe (ch. IV, § 2.2). For the Renaissance, see, *inter alia*, Agostino Nifo (ch. VI, § 3.2-3), Alessandro Achillini (ch. VI, § 2.2), and Zabarella (ch. IX, § 1.1). In ch. XIII, § 1.4, I examine the possible traditional background for the assimilation of mental act, representation, and content in a later Cartesian, namely Arnauld.

<sup>100</sup> Cf. Nifo (ch. VI, § 3.3), and his followers (ch. VII § 3.2). See already John of Malinas (ch. V, § 2.4). For the historical background, see ch. I, § 4.2. See also H. Dandini, examined in ch. X, § 2.2.3.

In his turn, Descartes often identified ideas with notions<sup>101</sup>. Moreover, Descartes' conflation of representation and content has a parallel in late sixteenth-century eclectic authors such as Giordano Bruno and Scipio Agnello. As we have seen, Bruno assigned to "umbra" and species a representational and instrumental function, but often he also regarded them as the object of knowledge<sup>102</sup>. Agnello assimilated species to idea, regarding both as the cognitive object<sup>103</sup>.

### 1.2.3. The origin of our perceptual ideas: innate and adventitious ideas

Where do our ideas about the sensible world come from? In the *Meditations* Descartes distinguished three types of ideas: innate, adventitious, and fictitious<sup>104</sup>. Evident examples of innate ideas are those of God, the soul, and of universal mathematical concepts. Fictitious ideas ("factae" or "factitiae") are produced by the mind on the basis of acquired knowledge. Adventitious ideas are perceptual ideas about the external world. As we saw earlier, Descartes categorically denied in the *Meditations* and elsewhere that these ideas can be caused by the sensible things<sup>105</sup>. Ideas can arise only within the mind; in this broader sense *all* ideas are innate. Thus, we see that the innateness of ideas has different meanings in Descartes<sup>106</sup>.

According to Descartes, all ideas are virtually innate<sup>107</sup>. First of all, ideas are innate if they have no physical correlate<sup>108</sup>, as in the case of geometrical figures (for example, a perfectly straight line).

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<sup>101</sup> See *Discours de la Méthode*, 38: "idées ou notions"; *Meditationes*, 440: "ideas, sive notiones"; see also *Principia*, 9, 23-4, and 25-29.

<sup>102</sup> For discussion, see ch VIII, § 3.3.

<sup>103</sup> See ch. VIII, § 3.4.

<sup>104</sup> *Meditationes*, 37-8; see also *AT* III, 383.

<sup>105</sup> Cf. subsection 1.1.2-3 above.

<sup>106</sup> For the sources of Descartes' nativism, see E. Gilson, *Études*, 27-50; Rodis-Lewis, "L'arrière-plan platonicien du débat sur les idées", 224-228.

<sup>107</sup> Cf. *AT* II, 598 and III, 418. For significant anticipations of the virtual innateness of intelligible species, see Aristotle and his medieval and Renaissance followers on the potential presence of the intelligible objects within the human mind; see below subsection 1.2.4.

<sup>108</sup> This does not always hold, however; the idea of a chimaera, for example, is not innate in the same way as geometrical figures are.

This applies in particular when the idea has a metaphysically special reference, as in the case of God and the soul. Secondly, ideas of abstract category concepts are innate, as in the case of substance, duration, and number<sup>109</sup>. Thirdly, an idea is generally innate if it is *occasioned*, in the sense in which perceptual ideas are distinct from the occasioning physical situations (brain motions, patterns in the pineal gland)<sup>110</sup>. Taking into account these various senses of innateness, how should the innateness of perceptual ideas be understood?

Descartes' thesis of radical innateness drew on his account of perception. According to Descartes, the innateness of sensory ideas does not mean that man has actual notions and ideas in his mind implanted there by nature<sup>111</sup>. As a rule, Descartes drew no clear distinction between occurrent thoughts (whether attended to or not<sup>112</sup>) and mere dispositions to have such thoughts. Yet, this very distinction was crucial for his views on the production of perceptual ideas<sup>113</sup>. Innatism may explain the origin of our ideas of the sensible world by locating their causal source in a dispositional property of the mind ("innata facultas"). This, at least, seems to be the upshot of Descartes' discussion of Regius' views in *Comments on a Certain Broadsheet*<sup>114</sup>. In this work Descartes made a case for

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<sup>109</sup> See *Meditationes*, 44. Also mathematical axioms, common notions, and basic concepts of science are supposed to be innate. This is further proof of the blurring of the distinction between ideas, concepts, notions, and axioms. Cf. R. McRae, "Innate ideas", in *Cartesian Studies*, ed. R.J. Butler, Oxford 1972, 32-54, for the distinction between various types of innateness.

<sup>110</sup> For discussion, see Buchdahl, *Metaphysics and the Philosophy of Science*, 111-117; A. Hausman, "Innate ideas", in *Studies in Perception*, eds. P.K. Machamer and R.G. Turnbull, Columbus (Ohio) 1978, 200-30, on p. 200f, on parallels with the Aristotelian notion of nature; cf. also F.P. Van de Pitte, "Descartes' innate ideas".

<sup>111</sup> *Notae in programma*, 365-66; AT XI, 655.

<sup>112</sup> Descartes repeatedly argued that the soul is always thinking, and that all knowledge is conscious; cf. AT III, 273, and 423-4. This radical view is a necessary consequence of Descartes' mind-body dualism, as there is no (bodily) cause that might eliminate (some of) our thoughts. This does not mean, however, that all thoughts are continuously attended to. For discussion, see D. Radner, "Thought and consciousness in Descartes"; Chappell, "The theory of ideas", 184.

<sup>113</sup> See Jolley, *The Light of Soul*, 35: Descartes may have conflated a general faculty of thinking with specific dispositions to have certain kinds of thought.

<sup>114</sup> *Notae in programma*, 357-9.

the innateness of perceptual ideas, characterizing them as dispositions of the mind:

Quippe nihil ab objectis externis ad mentem nostram per organa sensuum accedit, praeter motus quosdam corporeos (...) Unde sequitur, ipsas motuum & figurarum ideas nobis esse innatas. Ac tantò magis innatae esse debent ideae doloris, colorum, sonorum, & similium, ut mens nostra possit, occasione quorundam motuum corporeorum, sibi eas exhibere.<sup>115</sup>

In *Rules* Descartes left open the possibility that brain patterns are causally responsible for ideas<sup>116</sup>. In all later works, however, this possibility was explicitly denied: ideas concerning the external world arise within the mind as a result of the mind's capacity for processing perceptual data. It may be true that perceptual ideas are occasioned by and correlated with extra-mental stimuli, but they are still innate in the sense of being irreducible to the motions and patterns that trigger their production in the mind.

It has been argued that the distinction between ideas as dispositions and as occurrent thoughts is contradictory<sup>117</sup>. Notice, however, that Descartes applied the act-potency scheme to this distinction<sup>118</sup>: an idea may be a disposition at the potential level while being a thought at the actual level<sup>119</sup>. Mind acquires ideas by attending to something present to it; in the case of perception it attends to brain patterns, which occasion or trigger mental dispositions to 'actualize' cognitive contents<sup>120</sup>.

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<sup>115</sup> *Notae in programma*, 359.

<sup>116</sup> See *Regulae*, 410f. There is still room for ambiguity, however, precisely to the extent that Descartes thought of ideas as triggered by sensory stimulation, and also because he sometimes referred to the resulting brain patterns as ideas; cf. *Discours de la Méthode*, 55: "comment la lumière, les sons, les odeurs, les goûts, la chaleur, & toutes les autres qualitez des obiets extérieurs y peuvent imprimer diverses idées, par l'entremise des sens."

<sup>117</sup> Cf. R. McRae, "Innate ideas", 32-54, on 50-53.

<sup>118</sup> *Notae in programma*, 361; *Meditationes*, 189. See also Clarke, *Descartes' Philosophy of Science*, 48-54; Jolley, *The Light of the Soul*, 48.

<sup>119</sup> See also *Meditationes*, 67 and 189.

<sup>120</sup> According to Jolley, *The Light of the Soul*, 40, Descartes still held an Aristotelian doctrine of causality: one thing becomes infected with the properties of another. This is a limited description of Aristotle's view of causality, however.

1.2.4. The historical roots of dispositional innatism<sup>121</sup>

There are numerous parallels to be drawn between Descartes' dispositional innatism and more traditional views of the origin of intelligible species and of ideas. Aristotle had emphasized in *De anima* that actual intelligible forms exist only within the mind, thereby suggesting at least a potential or dispositional innatism of these forms in the possible intellect<sup>122</sup>. Moreover, the light-metaphor for the active mind entailed that the mind makes actual what was already there, hence, that cognitive content is produced intra-mentally. Hellenistic commentators, such as Themistius and Simplicius, indeed interpreted these passages in nativist terms. Their interpretation of Aristotle's psychology was taken over by some of the Arabic commentators. Also the speculations of Latin Platonics contained various samples of a terminological (and systematic) link between innate ideas and species<sup>123</sup>. Many early thirteenth-century authors, inspired equally by Augustine and by Arab psychology, used the term "species" for innate mental contents<sup>124</sup>.

After Thomas, one of the first significant parallels between intelligible species and innate perceptual ideas may be found in the virtual innatism of Giles of Rome. Giles deviated from Aquinas' psychology in his description of the agent intellect as "habitus principiorum"<sup>125</sup>, in particular when he claimed that it contains

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<sup>121</sup> Notice that in this subsection, I do not consider the position of authors such as Buridan, Jandun and Toletus, who regarded the intelligible species as a strictly *sense-dependent* disposition that modifies and stirs the mind towards its operations. See, for example, John Buridan, *Quaestiones de anima [Tertia lectura]*, 168: "Et ponamus quod huiusmodi species nec est habitus intellectualis nec actualis intellectio, sed quod sit actus vel dispositio proveniens a sensibili mediante sensu, requisitus vel requisita in mente, et necessaria ad formationem primae intellectionis, scilicet quam aliquis potest formare non proveniente alia intellectione." And Francisco Toletus, *Commentaria in tres libros Aristotelis De anima*, 170rb: "(...) species autem est dispositio modificans, & excitans intellectum ad operandum, & ut motivum obiectum concurrens obiective ac terminative immediate."

<sup>122</sup> See *De anima*, 429a22f and 431b26f; cf. ch. I, § 1.3.

<sup>123</sup> See ch. I, § 4.1.

<sup>124</sup> Cf. ch. II, § 1, in particular subsections 5 and 8.

<sup>125</sup> *Expositio super de anima*, Venetiis 1500, 69va. Thomas excluded this interpretation in *In De anima*, III, lectio X, 729. Giles did not propose an innatism of contents, however, but only of some kind of rules. This position would reappear in a more radical form in James of Viterbo's doctrine of innate *aptitudines*; see below.



the intelligible species at a “virtual” level<sup>126</sup>. There is also an important difference between his view and that of Descartes regarding the origin of perceptual ideas. According to Giles, no cognitive contents are generated without phantasms. The agent intellect enables the sensory images to provide the mind with an integrated representation of sensory information, or to move the possible intellect by virtue of its light. The illumination of the agent intellect consists in a *positive* action, an essential elaboration of sensory information. Therefore, it is causally co-responsible for generating the species, and it is said to contain the latter virtually<sup>127</sup>.

The virtual presence of intelligible species in the agent intellect was elaborated by Godfrey of Fontaines in the context of a sharp contrast between intellect and sensory information. This secular theologian of the late thirteenth century held that a “virtual contact” with the phantasms is sufficient for the agent intellect to produce an effect that may also be called an intelligible species, but only on condition that it is said to be contained *virtualiter* in the intellect’s own light<sup>128</sup>. The act of intellectual conception is occasioned by the phantasms. It is by virtue of a rather mysterious ‘spiritual’ contact with the outcome of sensible experience, that the agent intellect may inform the possible intellect with an act characterized as intelligible species. The latter is already virtually contained in the agent intellect’s light, but for its content the

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<sup>126</sup> *Expositio super de anima*, 74va; cf. *In librum De causis*, prop. 19, dub. 2, quoted in R. Friedemann, “Het «intellectus noster est potentia pura in genere intelligibilium» van Averroës en de «ratio intelligendi» van Aegidius Romanus”, in *Augustiniana* 8(1958), 48-110, on p. 79.

<sup>127</sup> See *Quodlibetum* V, q. 21, in *Quodlibeta castigatissima*, Venetiis 1504, and *In II Sent.*, dist. 24, p. 1, q. 1, a. 2. Indeed, as an information-bearing symbol, the intelligible species essentially depends on sensory representation. Although the latter is said to impress its similitude upon the possible intellect, the effect of this operation, viz. the intelligible species, should not be confused with a simply unveiled phantasm. For discussion, see ch. III, § 2.3.

<sup>128</sup> *Quodlibetum* V, eds. M. de Wulf & J. Hoffmans, Louvain 1914, q. 10, p. 40: “Et non dicitur quod se habeat ad phantasmata sicut ars, quia proprie loquendo actione intellectus agentis non fit aliqua dispositio formalis in ipsis phantasmatibus quasi in materia sed solum fit dicta sequestratio vel arbitratio vel remotio prohibentium et huiusmodi, quo facto virtute ipsius intellectus agentis et in eius lumine fit informatio intellectus possibilis ab ipsa intellectione talis cognoscibilis sive a specie intelligibili quae aliquo modo in lumine intellectus agentis continetur virtualiter.”

act/species must be determined by the effects of the phantasm's purification. The view that the soul forms species when stirred by the sensible objects impinging on the sense organs also recurred in some thirteenth-century Franciscans<sup>129</sup>.

Another significant anticipation of Descartes' dispositional innatism is found in the work of the Augustinian Hermit James of Viterbo, who rejected an intellectual abstraction based on the phantasms. He believed that the human soul knows by virtue of a power granted to it by God, and on the basis of inborn "aptitudines"<sup>130</sup>. Like Godfrey, James believed that the intellect does not really process sensory representations, although it is indeed stirred by them before producing its own act<sup>131</sup>. His elaborate line of reasoning in behalf of intelligible species<sup>132</sup> should not mislead us here, for he did not look upon mental representation as being (partially) caused by sensory images. Indeed, he simply identified cognitive species with the proper objects of knowledge<sup>133</sup>. By accepting the presence of unacquired species in the mind, so James observed, we may skirt all the problems connected with taking the phantasms as the foundation of

<sup>129</sup> Cf. ch. III, § 4.1 and 3.

<sup>130</sup> *Quolibet* I, ed. E. Ypma, Roma 196), q. 12, 178: "Non enim dicitur intellectus abstrahere a fantasmatis, ea depurando vel illustrando, sed quia, ab ipsis fantasmatis excitatus, puriori modo cognoscit quam fantasia. (...) Haec autem abstractio intellectus ex ipsa potentia intellectuali procedit, quae, secundum aptitudines inditas, primo habet ordinem ad intelligendum universalis, et per ipsa ad particularia, et prius ad intelligendum substantias quam accidentia". These items are discussed by E.P. Mahoney, "Themistius and the agent intellect in James of Viterbo and other thirteenth-century philosophers (Saint Thomas, Siger of Brabant and Henry Bate)", in *Augustiniana* 23(1973), 422-467, on pp. 422 and 452. James' innatistic position was rejected by his friar Alphonsus Vargas Toletanus, *In tres Aristotelis libros De anima subtilissimae quaestiones*, Vincentiae 1608, 81b-82b; moreover, it would also be remembered by Caietanus in the sixteenth century; cf. his *Commentaria in libros Aristotelis de Anima*, Florentiae 1509, K2ra.

<sup>131</sup> *Quolibet* I, q. 12, 174-75.

<sup>132</sup> *Quolibet* I, q. 13, 185-186 *propter*: a. "repraesentationem"; b. "depurationem"; c. "actionem"; d. "conservationem".

<sup>133</sup> *Quolibet* I, q. 13, 183: "Quantum igitur ad primum, sciendum est quod species, secundum proprietatem nominis, idem est quod forma. (...) Et quia id, quod est obiectum intellectus, est quod quid est, ideo forma vel species dicitur quod quid est." Cf. also pp. 182-85, where he argued for the identification of species and ideas invoking Aristotle and Augustine, and *Disputatio secunda de quolibet*, ed. E. Ypma, Roma 1969, q. 6, 98-100.

intellectual knowledge<sup>134</sup>. The species, which are described elsewhere as “causa et principium actualis cognitionis” or “ratio intelligendi”<sup>135</sup>, may be seen as either “aptitudo indita” or as “cognitio”. The latter is roughly an actualized species<sup>136</sup>. Viterbo’s reference to species as “idoneitates” or “aptitudines” may suggest that he conflated the representation of cognitive contents with the competence for producing them. However, according to James, inborn species are chiefly responsible for the contents of knowledge, while the active mind is the power to perform mental operations. James remained faithful to a Platonic-Augustinian view of sense perception and cognition; his psychology may be seen as a paradigm of the medieval nativist position.

A particular form of innatism with regard to perceptual knowledge appeared at the end of the thirteenth century in the work of Dietrich of Freiberg, who explored the role of the intelligible species as an essential link in the formal hierarchy of the soul’s powers. The intelligible species are instruments produced by the active mind; their function is to enable the possible intellect to make contact with sensible reality<sup>137</sup>. The possible intellect, insofar as it is actualized or informed by the intelligible species, may be regarded as the form of the “cogitativa” (the superior inner sense), since all sensory information is formally collected in the mental representation or intelligible species. This construction respects the Aristotelian dictum “non sine phantasmate”, intelligible species laying the connection between noetic powers and the sensible soul. By integrating the intelligible species in the constellation of noetic powers, Dietrich rescued the intrinsic coherence of human cognitive capacities, while at the same time

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<sup>134</sup> If the phantasms caused our species, we would be unable to know the substances; cf. *Quolibet* I, q. 13, 183f.

<sup>135</sup> See *Quolibet* I, q. 14, 193 and *Disputatio quarta de quolibet*, ed. E. Ypma, Roma 1975, q. 24, 92, respectively.

<sup>136</sup> *Quolibet* I, q. 13, 187-89, and q. 14, 193-4 and 197. The innatism of species thus implicitly resolves the problem raised by Richard of Middleton, and others; cf. 189, ll. 212-215.

<sup>137</sup> Cf. ch. III, § 5.2. Equally influenced by Neoplatonic views, Henry Bate regarded the intelligible species as innate contents; cf. ch. III, § 5.1.

ensuring the objective reference of cognitive contents in the sensible world<sup>138</sup>.

Plato had argued in the *Phaedo* that sense perception may cause an idea to be recollected<sup>139</sup>. Ficino assimilated the traditional intelligible species to innate "formulae", by which he meant the ideas latently present in the mind, which are functional in our grasp of sensible reality<sup>140</sup>. The intellect displays its cognitive activity by virtue of an innate spiritual force, and is connected to reality through "species" and "rationes" (also called "formulae") which represent the more narrowly defined cognitive objects<sup>141</sup>. Ficino denied that these "species" and "reasons" can depend on the sensible world, arguing that the human soul, in its knowledge of the sensible world, is largely self-sufficient. The soul does not need the body to receive any impressed forms from it<sup>142</sup>. Indeed, the potentiality of the soul is not such that it receives any forms (for it already possesses them all), but rather "quod exercet nunc quam non exercebat ante"<sup>143</sup>.

The Platonic view that sensory images occasion the generation of mental contents recurred in the cognitive psychology of Marcantonio Genua. Analogous to the way in which the phantasy may form the phantasm of a stone, the agent intellect may offer to the possible intellect a "species lapidis" produced on the basis of one of its own ideas<sup>144</sup>. Notice that Genua identified "species" with

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<sup>138</sup> Cf. *De visio beatifica*, in *Schriften zur Intellekttheorie*, ed. B. Mojsisch, Hamburg 1977, 115.

<sup>139</sup> Cf. *Phaedo*, 74b-75a.

<sup>140</sup> Cf. ch. VI, § 1.3. On Descartes and Renaissance Neoplatonism, see M. Meier, *Descartes und die Renaissance*, München 1914, 27-8, and 35-41.

<sup>141</sup> *Theologia platonica*, III.2, in *Opera*, Basileae 1576. That Ficino also considered the species as "quo", that is, as formal mediating principle of intellectual cognition, is confirmed by his analysis of the origin of the species in book XI of the *Theologia Platonica*, where he argued that the junction of intellect and intelligible object is caused by a "species intellectualis". See *Theologia platonica*, XI.1, p. 293.

<sup>142</sup> See *Theologia platonica*, IX.5, where Ficino argued against the Peripatetics that the soul works without the body; see also XV.3, and *In Enneades*, IV.6.1, in *Opera*, 1752: "Non imprimuntur sensibilibus formae in anima."

<sup>143</sup> *Expositio in interpretationem Prisciani Lydi super Theophrastum*, in *Opera*, 1829; see also *In Enneades*, V.3.4, in *Opera*, p. 1759.

<sup>144</sup> *In tres libros Aristotelis de anima*, Venetijs 1576, 145vb-146ra: "(...) nam per virtutum subordinationem, dum phantasia phantasiatur speciem lapidis huius; intellectus possibilis ab agente suo illustratur virtute ideae lapidis illius: at non pro

“quidditas” and with the Platonic idea<sup>145</sup>. Genua argued that the potentiality of the “intellectus progressus” consists in the fact that it does not actually possess the intelligible species<sup>146</sup>, for in its fallen state (*lapsus*) the intellect is oblivious of its own contents<sup>147</sup>. Notice, however, that the role of the phantasms was crucial for Genua, even though in effect they are only occasional stimuli: Genua rejected the existence of an intellectual memory for intelligible species<sup>148</sup>. This dependency on the phantasms expresses the *de facto* potentiality of the human “intellectus progressus”. The forms present in the latter can only be actualized by the agent intellect when the phantasy offers a corresponding occasion. Kessler correctly identified this position as anticipating in a sense Suarez’s view of a “sympatheia” between perceptual and cognitive faculties<sup>149</sup>.

A probable proximate source for Descartes’ view of the mind as producing ideas while attending to patterns in the brain was Suarez’s idea that the mind produces the intelligible species in accordance with the phantasms generated by the phantasy, but untouched by the latter, and simply attending to what happens ‘below’. As we have seen in the previous chapter, this view of a parallel production of phantasm and intelligible species was con-

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esse ideali, & prima vita; sed pro esse formali, & secunda vita. in cognitione lapidis illius speciei, ob hoc mens comparatur possibili, ut agens; non autem ut forma. Ad argumentum primum, dicitur quòd causatur à phantasmate, & ab intellectu agente: neque etiam à phantasmate, ut phantasma est, sed à phantasmate occasionaliter ab agente in ente.” For a more Averroistic formulation of what for Genua amounted to essentially the same idea, see also 130ra: “(...) rationalis anima indiget considerare intentiones imaginatas, ut ab eis moveatur”.

<sup>145</sup> *In de anima*, 148va; see 182ra: according to Simplicius, the true species are the intelligibles. For the ancient background, see also ch. I, § 4.1-2.

<sup>146</sup> *In de anima*, 150vb. For the terminology of “intellectus manens” and “progressus”, see ch. VIII, § 1.2.

<sup>147</sup> *In de anima*, 151ra: “(...) quòd intellectus cum a se ipso perfecto fluxerit, in ignorantiam ac ineruditionem sui ipsius, atque totius formalis substantiae dilabitur, ita ut indigeat perfici ab altero, & quamvis a se ipsa; tamen ut ab altero, propter lapsus; conversa deinde in substantiales rationes, quae in ipsa sunt, quaerit, & invenit: quatenus in ea ipsa aliunde inscribitur, perfecta evadit: & sic respectu sui perfectae ipsius, dicitur intellectus reminisci.”

<sup>148</sup> *In de anima*, 177vb. Intellectual memory implies that the intellect, once it has known a certain object, would be dominated by it for ever.

<sup>149</sup> Kessler, “The intellective soul”, 526-27. In my view, however, the effective sources for Suarez’s doctrine should rather be sought in medieval and Renaissance Scholastics, such as Giles of Rome and Sylvester of Ferrara.

nected to Olivi's psychology. Olivi saw intellectual cognition as an intentional relation between mind and reality, based on the mind's paying actual attention (*aspectus*). This relation is established by a conversion caused either by the will or by a stirring of the senses<sup>150</sup>.

Suarez gave a particular twist to the abstraction of species from phantasms. The intelligible species is not "abstrahabilis" in the sense that it would be mixed up with sensory representation, for an accident cannot be shifted from one subject to another. The abstraction of species consists in an "elevatio"<sup>151</sup>, that is, in a purely intra-mental production that depends on the phantasm only in the sense that the latter's *presence* is required. The phantasm has no further instrumental causality. Being "quasi exemplar"<sup>152</sup> it merely gives the occasion for mental operations to take place. Suarez apparently believed that the unity of the soul, encompassing both perceptual and cognitive faculties, sufficiently explained how this relationship between mind and phantasms is possible. He saw no need for a causal relation between mind and phantasm to explain the generation of cognitive contents grasping sensible objects.

The occasional and non-causal character of Suarez's sense-dependency clearly anticipated Descartes' theory of the origin of perceptual ideas. There was also an important point of difference, however, which should be mentioned here, namely, that Suarez did not subscribe to innatism of any sort<sup>153</sup>. The mind produces immaterial representations whenever the inner senses enable it to a corresponding operation. Intelligible species may be the exclusive product of the mind, but they are not in any sense innate. Rather, they just arise or emanate when the phantasy generates a phan-

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<sup>150</sup> See ch. III, § 3.4, and *In II Sent.*, q. 50, in *Quaestiones in secundum librum Sententiarum*, ed. B. Jansen, 3 vols, Quaracchi 1926, vol. II, 52f; q. 73, vol. III, 66.

<sup>151</sup> *De anima*, 721b: "(...) illaque elevatio a materiali repraesentatione phantasmatis ad spiritualem repraesentationem, speciei intelligibilis dicitur abstractio."

<sup>152</sup> See *De anima*, IV, c. 2, n° 12, 719b.

<sup>153</sup> Ludwig, *Das akausale Zusammenwirken*, 56-57, speaks of a preliminary presence of the species in the mind, but the text he refers to is about angels; cf. *De anima*, IV, c. 8, n° 13, 745.

tasm<sup>154</sup>. Indeed, Suarez defined the non-essential relationship between the inner sense and the operations of the intellect as “concomitantia”<sup>155</sup>. Descartes, by contrast, believed that the relation between sensory stimulation and the occurrence of appropriate ideas in the mind is inexplicable, and he regarded all ideas in the mind as innate<sup>156</sup>.

### 1.3. Evaluation

#### 1.3.1. Knowledge acquisition

Descartes was essentially unable to explain how sensory motions in the pineal gland can be converted to mental ideas in the mind. His stalemate was due to the clash of two conflicting principles of his psychology, namely, mind-body dualism and the unity of man. Thus, (i) certain facts of experience show beyond doubt that man’s nature is one<sup>157</sup>; (ii) dualism is an acceptable metaphysical and scientific hypothesis about how such experiences may arise<sup>158</sup>; (iii) although mind and body are two independent substances, in the case of man they are mutually incomplete<sup>159</sup>.

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<sup>154</sup> *De anima*, IV, c. 8, 745a: “statim enim, ac anima ipsa quippiam cognoscit per phantasiam, ab ipso intellectu manat species id repraesentans.” See Lundberg, *Jesuitische Anthropologie*, 108-109.

<sup>155</sup> *De anima*, IV, c. 7, 740a: “Hinc ergo oritur inter potentias has tam naturalis concomitantia quae essentialis non est, sed ex actuali operatione proveniens, (...)” Cf. the affinity with the concept of “colligantia” in Jean de la Rochelle and Olivi, examined in ch. II, § 1.4 and III, § 3.4.

<sup>156</sup> *Notae in programma*, 358; cf. *AT* III, 667, and *Meditationes*, 222, on the ‘miracle’ of the interaction between the mind and the pineal gland.

<sup>157</sup> Cf. Descartes’ correspondence with the princess Elisabeth, *AT* III, 691-92.

<sup>158</sup> For a general discussion of Cartesian dualism, see: Buchdahl, *Metaphysics and the Philosophy of Science*, 102-104; M.D. Wilson, “Descartes: The epistemological argument for mind-body distinctness”, in *Nous* 10(1976), 3-17; idem, “Body and mind from the Cartesian point of view”, in *Body and Mind. Past, Present, and Future*, ed. R.W. Rieber, New York-London-Toronto 1980, 35-55; G.P. Baker and K.J. Morris, “Descartes unlocked”, in *British Journal for the History of Philosophy* 1(1993), 5-27.

<sup>159</sup> G.A. Wilson, “Henry of Ghent and René Descartes on the unity of man”, *Franziskanische Studien* 64(1982), 97-110, in particular, pp. 98-99, and 107-108. T.M. Schmalz, “Descartes and Malebranche on mind and mind-body union”, in *Philosophical Review* 101(1992), 281-325, argues that the mind-body union is primitive, that is, it is a substance with its own attributes, not a conjunction; cf. p. 281-301.

Knowledge of the sensible world can only be had through ideas<sup>160</sup>. The mind as "res cogitans", however, is necessarily ignorant of how these ideas are produced, and of why it has the ideas it does, since the mind as such just *has* ideas without being engaged in tracing out how they refer to external objects. The extra-mental object is just a condition for a mental state to instantiate the object's form or essence<sup>161</sup>. The dispositional innatism of sensible ideas is such that the mind has not a faculty of receiving sensible forms in general, but a specific disposition to form the ideas of all sensible qualities when appropriately stimulated. The occurrence of these ideas is occasioned by the fact that the bodies we perceive act on our sense organs. Descartes' dualism radically blocked out any possible explanation of the relation between mechanical input and mental response<sup>162</sup>.

Descartes repeatedly stressed that there is no causal relation of any kind between the physical activity of objects on the senses and the perceptual ideas in the mind. The idea is an epistemic interpretation of physical motions. That this interpretation or response is at all possible, is based on the postulate that the immaterial mind may attend to the patterns on the pineal gland. Descartes thus explained the acquisition of perceptual knowledge in essentially circular terms: the possibility of knowledge acquisition is ultimately just postulated, being based on the mind's sensitivity to brain motion, that is, on its unacquired ability to interpret the world without being affected by it<sup>163</sup>.

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<sup>160</sup> Cf. *AT* III, 474.

<sup>161</sup> See for discussion, Lennon, "The inheritance pattern and Descartes' ideas", 51.

<sup>162</sup> Descartes has no room for an information-theoretical account of interpretive processes occasioned by the brain patterns. See Meyering, *Historical Roots of Cognitive Science*, 87-88.

<sup>163</sup> Yolton interprets the Cartesian idea as a sign or a semantic response; cf. "Perceptual cognition with Descartes", in *Studia Cartesiana* 2(1981), 63-82 and *Perceptual Acquaintance*, ch. I. He emphasizes the fact that the relation between mind and world is not causal, as in Scholastic psychology, but signficatory; cf. "Perceptual cognition with Descartes", pp. 72-73. Yolton obviously does not regard the circularity of Cartesian cognitive psychology as problematic. However, he submits an appealing correction to Rorty's a-historical interpretation of Descartes' 'mirror philosophy'; see his "Mirrors and veils, thoughts and things: The epistemological problematic", in *Reading Rorty. Critical Responses to Philosophy and the Mirror of Nature*, ed. A.R. Malachowski, Oxford 1990, 58-73. For the semantic



### 1.3.2. Ideas and intelligible species

Descartes reversed the order that had characterized the Aristotelian view of knowledge acquisition: nothing is received from the senses that was not first in the intellect<sup>164</sup>. Descartes' interpretation of Scholastic psychology was anything but unbiased. He brought down the views of the School to the intellectual level of a child, which experiences the link between mind and body as being something essential<sup>165</sup>. He regarded species (without distinguishing between sensible and intelligible) as little flying images, iconic resemblances of the object that produced them, which are impressed on the mind. He said nothing about intelligible species, and ignored in particular what is essential about them, namely, that they are strictly instrumental principles, which bear only a structural and abstract resemblance to the object they represent.

The Peripatetic view of knowledge had a number of features that are very appealing, and that were lacking in the Cartesian construction. First, it was able to account for the causal interaction between mind and body in the production of knowledge. The intellectual soul is form of the body, and our ability to think involves the use of perceptual capacities, though not directly that of bodily organs<sup>166</sup>. Secondly, the Peripatetic doctrine that all knowledge is sense-dependent precludes that introspection is a source of knowledge. Although Descartes did not subscribe to a representational view of cognition, in the strict sense that the idea would be a "tertium quid", his dualism led him to embrace a privileged access to the mind. And this in its turn entailed that his theory of knowledge acquisition was ultimately circular<sup>167</sup>.

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relation between ideas and things, see also Danto, "The representational character of ideas and the problematic of the external world".

<sup>164</sup> Cf. Hatfield, "The senses and the fleshless eye", 45-46.

<sup>165</sup> *Meditationes*, 440-41.

<sup>166</sup> See M. Frede, "On Aristotle's conception of the soul", in *Essays on Aristotle's De Anima*, eds. M. Nussbaum & A. Oksenberg Rorty, Oxford 1992, 93-107, on 106; cf. also K.V. Wilkes, "Psuchè versus the mind", in *idem*, 109-127.

<sup>167</sup> Cf. AT III, 474: "car, estant assuré que ie ne puis avoir aucune connoissance de ce qui est hors de moy, que par l'entremise des idées que i'en ay eu en moy, ie me garde bien de rapporter mes iugemens immédiatement aux choses et de leur rien attribuer de positif, que ie ne l'apperçoive auparavant en leurs idées; mais ie

Descartes rejected the idea of a causal relation between physical objects and perceptual ideas in the mind. For this reason, his cognitive psychology resembled certain aspects of the medieval and Renaissance opposition against the species. I have considered a number of ways in which Descartes' view of the origin of ideas was anticipated by authors who applied spiritualistic corrections to the naturalistic tendencies inherent in the species doctrine. As examples I have mentioned Godfrey of Fontaines, Peter Olivi, James of Viterbo, and Suarez. So far, I have not mentioned the affinity between Descartes' position and that of Ockham, who opposed the species theory but did not relinquish Aristotelian naturalism. There is a significant parallel between Ockham and Descartes with regard to knowledge acquisition.

Ockham submitted a new (epistemo-)logical model of knowledge acquisition that served as an alternative to the established account, which was chiefly couched in terms of a (meta-) physical process. On Ockham's model, knowledge of universals is based on our ability to isolate and to correctly represent in a *mental* language invariant aspects of sensible reality<sup>168</sup>. One of Ockham's main achievements lay in the fact that he emphasized the linguistic, and more specifically the semantic aspects involved in knowledge acquisition and in the processing of sensory information. On the other hand, however, he clearly underestimated in this context the role that may be played here by mechanisms that are not accessible to conscious reflection, when he claimed that the mind can generate concepts in a *direct* interaction with individual objects. More crucially, Ockham's position ultimately begged the question of the origin of knowledge, for his postulated mental capacity is a huge black box that is presumed to execute just the complex function it was rang in to explain.

According to Descartes, the physical motions caused in the nerves and in the brain by the motions of bodies, serve as an occasion for the mind to form an idea by virtue of a natural faculty.

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crois aussi que tout ce qui se treuve en ces idées, est necessairement dans les choses"; *Discours de la Méthode*, 35 and *Meditationes*, 37, 40-44, and 181.

<sup>168</sup> For a modern variant of this view, see J. Fodor, *The Language of Thought*, New York 1975. For a recent critical discussion of this concept, see H. Putnam, *Representation and Reality*, Cambridge (Ma.) 1988, p. 5f.

Yolton has argued that the idea must be seen here as a semantic and epistemic response to physical motion, which informs the perceptual apparatus as a natural sign<sup>169</sup>. When the mind responds to events in the brain, this response is not *caused* by physical events, but the mind *interprets* these events. Indeed, ideas do not resemble objects, but they designate objects. That it is at all possible to translate physical motions into cognitive contents, is grounded in the postulate of a natural relation between mind and brain<sup>170</sup>. In Descartes as well as in Ockham, however, the production of concepts or ideas itself remains totally in the dark.

## § 2. THOMAS HOBBS: MOTION, PERCEPTION, AND IDEAS

Several English works on psychology and epistemology, composed around the turn of the sixteenth and seventeenth century, accepted the doctrine of species<sup>171</sup>. Also Hobbes drew up a doctrine of

<sup>169</sup> See Yolton, *Perceptual Acquaintance*, 18-19

<sup>170</sup> Yolton uses rather puzzling expressions to argue his interpretation; cf. *Perceptual Acquaintance*, p. 37: by virtue of the mind's relation to the significant motion in the sense organs and in the brain, ontic being may be transformed into epistemic reality.

<sup>171</sup> See R. Burton, *Anatomy of Melancholy*, ed. H. Jackson, New York 1977 (2nd ed.), 165. For a discussion of Burton's views on the Aristotelian agent intellect, see K.R. Wallace, *Francis Bacon on the Nature of Man, the Faculties of Man's Soul: Understanding, Reason, Imagination, Memory, Will, and Appetition*, Urbana-Chicago-London 1967, 99. Also Bacon accepted the view that the senses receive species; cf. F. Bacon, *Works*, eds. J. Spedding, R.L. Ellis, and D.D. Heath, London 1857-74, vol. II, 430: "The species of visibles seem to be emissions of beams from the objects seen; almost like odours; save that they are more incorporeal: but the species of audibles seem to participate more with local motion, like percussions or impressions made upon the air." For discussion, see also J. Bernhardt, "Essai de commentaire", in Thomas Hobbes, *Court Traité des Premiers Principes. Le Short Tract on First Principles de 1630-1631. La naissance de Thomas Hobbes à la pensée moderne*, texte, traduction et commentaire par Jean Bernhardt, Paris 1988, 167, note 155. In general Bacon showed little respect for Aristotle and avoided the classical terminology of abstraction; see *Works*, vol. IV, pp. 58-59, 69, 88, 292-93, and 344-45. For discussion, see K.R. Wallace, *Francis Bacon on the Nature of Man, the Faculties of Man's Soul*, 45 and R.F. Jones, "The Bacon of the seventeenth century", in *Essential Articles for the Study of Francis Bacon*, ed. B. Vickers, London 1968, 3-27, on p. 5. Bacon had more sympathy for Telesio's psychology; cf. *Works*, vol. IV, 398; Wallace, *o.c.*, 16; and V.K. Whitaker, "Francis Bacon's intellectual milieu", in *Essential Articles for the Study of Francis Bacon*, 28-50, on pp. 29 and 44. Also Herbert of Cherbury accepted the species; cf. *De veritate*, London 1645 (first edition 1623, reprint Stuttgart-Bad Cannstatt

species in his early *Short Tract*. In later works, however, he definitely broke with the Scholastic psychology of cognition, and relentlessly emphasized the absurdity of the theory of species. As compared to Descartes, Hobbes evolved his philosophy in a philosophical environment that was much less dominated by Peripatetic views<sup>172</sup>. It is true that Hobbes studied Aristotelian physics at Oxford until 1608, but he did not set to work on his own philosophy until around 1628. In the meantime he lived in circles of gentry that had an open ear for alternative philosophies<sup>173</sup>. In opposition to the School as well as to Descartes, Hobbes developed a theory of perception and of primary knowledge exclusively in terms of space, time, body, and motion<sup>174</sup>.

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1966), pp. 75 and 134. For the acceptance of the species in English philosophy after Hobbes, see ch. XIII, § 2, introduction.

<sup>172</sup> See W. Costello, *The Scholastic Curriculum at Early Seventeenth-Century Cambridge*, Cambridge (Ma.) 1958, 9, for the influence of Scholastic authors on the English universities; Ch.B. Schmitt, "Philosophy and science in sixteenth-century universities", in *The Cultural Context of Medieval Learning*, eds. J.E. Murdoch & E.D. Sylla, Dordrecht-Boston 1975, 485-530, on p. 492: the textbook tradition dominated the English university. Hobbes praised Aristotelian natural philosophy; see *Opera Latina*, vol. IV, 236; *English Works*, vol. VII, 76; see also J. Bernhardt, "Essai de commentaire", in Thomas Hobbes, *Court Traité des Premiers Principes*, 67. See J. Bernhardt, "L'apport de l'aristotélisme à la pensée de Hobbes", in *Thomas Hobbes. De la métaphysique à la politique*, eds. M. Bertman & M. Malherbe, Paris 1989, 9-15, for Hobbes' possible indebtedness to Aristotelian philosophy. For Hobbes' interest in Scholastic philosophy, cf. A. Pacchi, "Una 'biblioteca ideale' di Thomas Hobbes: il Ms. E2 dell' Archivio di Chatsworth", in *Acme* 21(1968), 5-42, on 17, and 19f. M. Blay, "Genèse des couleurs et modèles mécaniques dans l'oeuvre de Hobbes", in *Thomas Hobbes. Philosophie première, théorie de la science et politique*, eds. Y.Ch. Zarka & J. Bernhardt, Paris 1990, 153-168, argues on p. 168 that Hobbes' explanation of the genesis of colours, like the Cartesian theory, is a translation into mechanical terms of the Aristotelian conceptualization.

<sup>173</sup> He was secretary to Bacon, and had contacts with Cavendish, Walter Warner, and the Falkland circle.

<sup>174</sup> I do not agree with D.W. Hamlyn, *Sensation and Perception. A History of the Philosophy of Perception*, London 1961, 57: "Yet, when all is said and done, his [sc. Hobbes'] theory is only the Scholastic theory translated into mechanical terms."

## 2.1. *The early Hobbes between Aristotle and Descartes*

### 2.1.1. *The Short Tract: a mechanistic doctrine of species*

The perception theory developed by Hobbes in the *Short Tract* (ca. 1634)<sup>175</sup> strikes one as an updated version of the species theory of medieval perspectivist optics<sup>176</sup>. Perception is analyzed as a process involving an agent (the external object) and a patient (sense organs, brains): the agent produces a physical change in the patient, thereby prompting the latter to produce an image of the former<sup>177</sup>. Generally speaking, the agent may touch the patient through the medium or through something issuing from itself, that is, through the species. Sensation involves material things moving the perceptual apparatus through sensible species<sup>178</sup>. These species are not accidents but substances, because accidents cannot be moved in space<sup>179</sup>. When the brain is affected by the animal spirits, which in their turn are moved by the species in the nervous

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<sup>175</sup> Thomas Hobbes, *Court Traité des Premiers Principes. Le Short Tract on First Principles de 1630-1631. La naissance de Thomas Hobbes à la pensée moderne*, texte, traduction et commentaire par Jean Bernhardt, Paris 1988. The authenticity of this work (defended by Bernhardt on p. 88) is challenged by A. Pacchi, "Hobbes e l'epicureismo", in *Rivista critica di storia della filosofia* 33(1978), 54-71, on p. 63, note 38, and by R. Tuck, "Hobbes and Descartes", in *Perspectives on Thomas Hobbes*, eds. G.A.J. Rogers & A. Ryan, Oxford 1988, 11-41, on pp. 17-19. Recently, the authenticity of the *Short Tract* has been convincingly established by K. Schuhmann, "Le *Short Tract*, première oeuvre philosophique de Hobbes", unpublished manuscript.

<sup>176</sup> For an outline of this doctrine in Roger Bacon, see ch. II, § 2.3; cf. ch. I, § 3.1, for its Arabic background. It is not unlikely that Hobbes was also influenced by Fracastoro, in particular with regard to the substantial nature he assigned to the species; cf. ch. VI, § 1.5. On Hobbes' relationship with the medieval and Renaissance optical tradition, see J. Prins, "Kepler, Hobbes and medieval optics", in *Philosophia naturalis* 24(1987), 287-310. See also A. Pacchi, *Introduzione a Hobbes*, Bari 1971, 70; J. Bernhardt, "Hobbes et le mouvement de la lumière", in *Revue d'histoire des sciences* 30(1977), 3-24, on p. 12. On Hobbes' sources, besides the commentary of Bernhardt in his edition of this work, see also F. Brandt, *Thomas Hobbes' Mechanical Conception of Nature*, Copenhagen-London 1928, 385-86. Hobbes' (possible) acquaintance with Grosseteste is discussed by A. Pacchi, *Convenzione e ipotesi nella formazione della filosofia naturale di Thomas Hobbes*, Firenze 1965, 234-43.

<sup>177</sup> *Short Tract*, pp. 12-48.

<sup>178</sup> *Short Tract*, pp. 24-26.

<sup>179</sup> *Short Tract*, 38 and 16; thus, in accordance with Aristotelian physics, Hobbes thought that the transfer of accidents is impossible. For a discussion of the doctrinal background of the view of corpuscular species, see ch. I, § 1.1 (Democritus), and 1.4.1 (Epicurus); cf. also ch. VI, § 1.5, for Fracastoro's view of species.

system, a phantasm of the external object is produced. This phantasm, also described as an image or similitude, is a reaction of the brain to the affection by the animal spirits, and is identified as an act of understanding<sup>180</sup>. Perception thus involves two moments: the first is an act of sense, tantamount to the motion of the animal spirits induced by the species; the second is an act of understanding, described as the brain's entertaining a phantasm of something<sup>181</sup>.

The *Short Tract* gave a mechanistic account of the production of mental images. Notwithstanding the use of Scholastic terminology in this early work (species, similitude, phantasm), the detachment from Scholastic psychology is already clearly felt. An evident link with traditional philosophy is Hobbes' characterization of the phantasm as a similitude. Indeed, like Alhazen, for example, Hobbes analyzed the correspondence between object and phantasm in terms of the action of species (thing-like entities) on the senses (that is, the brain), by means of a mechanical transmission of sensible features through straight propagation. The similarity between mental images and their objects is not understood in terms of a *formal* affinity between the two, but regards the relationship between motions of the species and motions of the spirits. An important consequence of this mechanistic approach in Hobbes was the fact that he saw the perceived sensible quality as inhering in the percipient, and not in the perceived object<sup>182</sup>.

### 2.1.2. Cartesian optics: a turning point in Hobbes' theory of perception?

Hobbes' important philosophical works were not published until the early 1640's. As is well known, he became acquainted with Descartes' philosophical and scientific work in the Mersenne circle

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<sup>180</sup> *Short Tract*, 40-48; for a discussion of the role of the animal spirits in Hobbes, see Brandt, *Thomas Hobbes' Mechanical Conception of Nature*, 160-61. For the role of the animal spirits in Descartes, see above § 1.1.2.

<sup>181</sup> *Short Tract*, 48.

<sup>182</sup> *Short Tract*, 44; cf. also *The Elements of Law Natural and Politic*, ed. F. Tönnies, London 1889, 4-7; *Leviathan*, ed. C.B. Macpherson, London 1968, 19853, 85-86. For a discussion of Hobbes' phenomenalism, see Bernhardt, "Commentaire", 111-13, 134, and below.

in the course of the 1630's, and studied Descartes' *Essays* soon after their publication<sup>183</sup>. It is interesting to note that Hobbes abjured the species doctrine in 1636<sup>184</sup>, and started to work on a theory of the medium in his optical writings<sup>185</sup>. In the early 1640's, Hobbes must have feared that Descartes might claim the authorship of some of his views about the nature of light and of ideas<sup>186</sup>. Also in some of his later works he claimed priority for his own theory of light, set forth by Descartes in *Dioptric*<sup>187</sup>. I do not think that these

<sup>183</sup> In critical studies, it is now commonplace to stress that the reading of the Cartesian *Essays* had a catalyzing effect on the development of Hobbes' non-political thought. See Brandt, *Thomas Hobbes' Mechanical Conception of Nature*, 154f; Bernhardt, "Hobbes et le mouvement de la lumière"; Tuck, "Hobbes and Descartes"; Y.-Ch. Zarka, "La matière et la représentation: Hobbes lecteur de la *Dioptrique* de Descartes", in *Problématique et réception du "Discours de la Méthode"*, ed. H. Méchoulan, Paris 1988, 81-98, on pp. 82-83, 86, and 97. In my view, however, these are for the most part speculations based on insufficient knowledge of the available evidence.

<sup>184</sup> See Hobbes' letter to William Newcastle of 16/26 October 1636, in Historical Manuscripts Commission (ed.), *Thirteenth Report*, Appendix, Part II: *The Manuscripts of His Grace the Duke of Portland Preserved at Welbeck Abbey*, vol. II, London 1893, p. 129f.

<sup>185</sup> See *Tractatus Opticus* I (published in 1644 by Mersenne in his *Cogitata Physico-Mathematica*), in *Opera Latina*, vol. V; cf. pp. 217-219; and *Tractatus Opticus* II, ed. F. Alessio, in *Rivista critica di storia della filosofia* 18(1963), 147-228. See also Brandt, *Thomas Hobbes' Mechanical Conception of Nature*, 102-107; J. Bernhardt, "La polémique de Hobbes contre la *Dioptrique* de Descartes dans le *Tractatus opticus* II (1644)", in *Revue internationale de philosophie* 33(1979), 432-42, pp. 432-34. According to K. Schuhmann, *Tractatus Opticus* I is an abridged version of parts of *Tractatus Opticus* II.

<sup>186</sup> He expressed his concern about this to Mersenne in a letter of 30 March 1641. See Mersenne, *Correspondance*, vol. X, 569: "Jam verò monitus, hoc dicere apud te amplius habeo, me doctrinam illam de naturâ et productione luminis, et soni, et omnium Phantasmatum sive idearum, quam Dominis de Cartes nunc respuit, explicasse coram Dominis fratribus excellentissimis, Guglielmo Comite de Newcastle et Carolo Cavendish Equite aurato, communi nostro amico, anno 1630. Quod ideo dico, ne is eam doctrinam aliquando agnoscens, fundatam esse dicat principijs suis. Nae illius principia nulla sunt, neque opus habet fundamentis, qui vi ingenij in aere ipso aedificare potest quidquid vult." Cf. Tuck, "Hobbes and Descartes", 14-15.

<sup>187</sup> See *A Minute or First Draught of the Optiques* (1645-46), fos. 74-75, quoted in Tuck, "Hobbes and Descartes", 25-26. A critical edition of this work may be found in E.C. Stroud, *Thomas Hobbes' "A Minute or First Draught of the Optiques"*. A Critical Edition, Ph.D. diss., University of Wisconsin, Madison 1983. In *Tractatus Opticus* II, on 151f, Hobbes' rejection of intentional species is accompanied by a reference to Descartes. Zarka, "La matière et la représentation: Hobbes lecteur de la *Dioptrique* de Descartes", 85-86, suggests that the omission of this reference to Descartes in the corresponding passage in *De homine*, shows that Hobbes did not abandon his priority claim with regard to the new theory of the light.

facts suffice to establish that Hobbes' philosophy was just the next hand in a game started by Descartes. Hobbes' work on optics dealt with more and deeper problems than Descartes'<sup>188</sup>; moreover, Hobbes was highly critical of some of Descartes' views in optics and in psychology<sup>189</sup>. In cognitive psychology, he precluded the need for a strict distinction between soul and body, and even squarely opposed himself against Descartes in declaring that the soul is corporeal. Visual representation, for example, he defined as a mode of the second degree, that is, a mode of certain motions caused by substantial actions in the body. This makes vision essentially motion; no spiritual soul is needed to explain it<sup>190</sup>.

In *Anti-White* (ca. 1643) Hobbes still used the term "species", which was now identified with the mental image or picture derived from the action of an agent outside the mind<sup>191</sup>. Adopting the term "species" from Thomas White, Hobbes defined it here as "apparentia et aspectus materiae", equating "species, sive imaginem, sive ideam in sentiente"<sup>192</sup>. In this polemical treatise, too, Hobbes proclaimed perception to be motion in the body, brought about by motion of the external objects. Depending on one's point

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<sup>188</sup> J. Prins, "Kepler, Hobbes and medieval optics", in *Philosophia naturalis* 24(1987), 287f. For an overview of Hobbes' optical research, see J. Bernhardt, "L'oeuvre de Hobbes en optique et en théorie de la vision", in *Hobbes oggi*, ed. A. Napoli, Milano 1990, 245-268.

<sup>189</sup> See Zarka, "La matière et la représentation", 82 and 86.

<sup>190</sup> *Tractatus Opticus* II, 208, 210-11, 216-17, where Hobbes examined *Dioptrique*, 109 and 130; for discussion, see Bernhardt, "La polémique de Hobbes contre la *Dioptrique* de Descartes dans le *Tractatus opticus* II (1644)", 441.

<sup>191</sup> Thomas Hobbes, *Critique du De Mundo de Thomas White*, eds. J. Jacquot and H. Whitmore Jones, Paris 1973; see also Thomas Hobbes, *Thomas White's "De mundo" examined*. The Latin translated by H. Whitmore Jones, London 1976. See *Thomas White's "De mundo" examined*, ch. III.2, p. 41: "A mind-picture derives from the action of some agent we suppose to exist, or to have existed, outside the mind of the person who imagines [something]". See also ch. XXVII.19: "Perception is brought about by the action of objects (...) Vision when the motion of a shining or illuminated body is continually propagated through a medium from part to part, through the eye as far as the brain, and even to the heart itself (...) Reproduced and sent back, by the reaction and resistance of the heart, to the outer limits of the animal, such motions constitute impressions (...)." Cf. *De corpore*, in *Opera Latina*, vol. I, 329-30. See in this context also the mind-mirror definition in *De principiis cognitionis*, in M.M. Rossi, *Alle fonti del deismo e del materialismo moderno*, Firenze 1942, 104.

<sup>192</sup> *Critique du De Mundo de Thomas White*, ch. XXXVIII.11, p. 420.



of view, this motion may variously be called “phantasma”, “imago”, “imaginatio” or “memoria”<sup>193</sup>.

## 2.2. *The production of perceptual content: Hobbes and the Theaetetus*

Hobbes explained the genesis of perceptual and mental representations exclusively in terms of physiology, that is, in terms of matter and motion<sup>194</sup>. Perception and the production of primary knowledge (images, ideas etc.) are phenomena that belong entirely to the physical realm<sup>195</sup>. This is why he discussed them not only in *De homine*, but more generally also in *De corpore*<sup>196</sup>. The object causes a motion in the sense organs that elicits a reaction in the brain, namely a representation<sup>197</sup>. The phantasm or mental picture is an effect in the nervous system, which reacts to the motions caused by external objects<sup>198</sup>. The content of perception is thus a joint product of external object and organism, both taken as thoroughly physical beings<sup>199</sup>.

Hobbes' view of perception as the joint product of object and percipient bears a striking resemblance to Plato's explanation of

<sup>193</sup> *Critique du De Mundo de Thomas White*, 326, 349-51. On the nomenclature of “image”, “picture” and “phantasm” in Hobbes, see J. Prins, “Kepler, Hobbes and medieval optics”, in *Philosophia naturalis* 24(1987), 303-305.

<sup>194</sup> For a general analysis of Hobbes' doctrine of perception, see T. Sorell, *Hobbes*, London 1991 (first edition 1986), ch.'s VI-VII; J. Barnouw, “Hobbes's causal account of sensation”, in *Journal of the History of Philosophy* 18 (1990), 115-130; idem, “Respite finem! The importance of purpose in Hobbes' psychology”, in *Thomas Hobbes. De la métaphysique à la politique*, eds. M. Bertman & M. Malherbe, Paris 1989, 47-61.

<sup>195</sup> Cf. the twofold distinction between cognition as sense and as science in Thomas Hobbes, *The Elements of Law Natural and Politic*, 24.

<sup>196</sup> See *De corpore*, in *Opera Latina*, vol. I, 389, for perception as a phenomenon, and p. 393: bodies are endowed with sense. For a general discussion, see Brandt, *Thomas Hobbes' Mechanical Conception of Nature*, 342-50. For the possibly Telesian and (above all) Campanellian background of sense as a property of the body, see *De corpore*, 320, and K. Schuhmann, “Telesio and Hobbes”, in *Hobbes Studies* 1(1988), 109-133, on p. 130.

<sup>197</sup> See also *Tractatus Opticus* I, 220.

<sup>198</sup> See *De corpore*, 317 and 319: “sensio est ab organi sensorii conatu ad extra, qui generatur a conatu ab objecto versus interna, eoque aliquandiu manente per reactionem factum phantasma.” For discussion, see J. Leshen, “Reason and perception in Hobbes: An inconsistency”, in *Nous* 19(1985), 429-437, on p. 430.

<sup>199</sup> See A.G.A. Balz, “The psychology of ideas in Hobbes”, in *Studies in the History of Ideas*, vol. I, New York 1918, 127-148, on pp. 142-43.

the origin of sense perception in the *Theaetetus*<sup>200</sup>. There Plato argued that the existence and nature of perceptual objects or qualities depend on the act of perceiving as well as on the external object itself. Indeed, each perception involves an interaction between an acting object and a sense organ that is acted upon. The outcome of this interaction is a perception and a perceived thing<sup>201</sup>. Since percipient and sense-object are mutually interdependent, Plato denied that "being" can be ascribed to the object as such, independently of the percipient. Two consequences of Plato's view of the mechanics of perception should be mentioned here. In the first place, perceptual qualities can be properly ascribed to things only in relation to perceivers. Secondly, because perceptual qualities depend on individual perceivers, they are radically unstable. Later, also Epicurus would argue that perceptual qualities are not independent of the perceiving subject<sup>202</sup>.

According to Hobbes, perception is motion. Sensations are produced through a physical and physiological process. When the brain is stirred by physiological motions it generates an effect that is propagated 'outwards'. In *Elements of Philosophy*, for example, Hobbes described visual perception as a reversed "endeavour"<sup>203</sup>. The reaction of the brain, which is in itself just physiological motion, is not experienced as motion by the percipient subject, but as the appearance of a body of a certain colour and shape<sup>204</sup>.

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<sup>200</sup> See also *Tractatus Opticus* II, 207: "Neque de visione aliter censuere Plato et Aristoteles quam ut esset motus, ut manifestum est (...) ex libro Platonis qui inscribitur *Theaetetus*".

<sup>201</sup> *Theaetetus*, 156d-e: "As soon, then, as an eye and something else whose structure is adjusted to the eye come within range and give birth to the whiteness together with its cognate perception - things that would never have come into existence if either of the two had approached anything else - then it is that, as the vision from the eyes and the whiteness from the thing that joins in giving birth to the colour pass in the space between, the eye becomes filled with vision and now sees, and becomes, not vision, but a seeing eye; while the other parent of the colour is saturated with whiteness and becomes, on its side, not whiteness, but a white thing, be it stock or stone or whatever else may change to be so coloured." D.K. Modrak, "Perception and judgment in the *Theaetetus*", in *Phronesis* 26(1981), 35-54, defines this theory as "phenomenalist", because it makes the characteristics of the perceptual object depend on the characteristics of the percipient's organ as well as on the external world; cf. in particular pp. 38, and 40-41.

<sup>202</sup> See Diogenes Laertius, *Lives*, X.68-69.

<sup>203</sup> Cf. *Elements*, I.iv.27.

<sup>204</sup> *Tractatus Opticus* I, 220.

Although Hobbes' empiricism seems absolute<sup>205</sup>, it is in reality rather ambiguous because it fundamentally entailed a form of phenomenalism<sup>206</sup>. Hobbes argued that we do not perceive the object itself, but that perceptual qualities inhere in the perceiver. Hobbes rejected all similitude between objects and their perceptual images: light and colour are mere phantasms, rather than detectable properties of sensible things themselves<sup>207</sup>. Bodies just have the power to induce changes in the perceptual apparatus, but this does not mean that these changes resemble their causes in any way. Only magnitude and motion exist in the bodies themselves. They are the only accidents that belong not only to the perceiving subject, but also to the sensory objects themselves. Sense perception is the grasping of effects of physiological motions<sup>208</sup>. This means that the information conveyed by the senses always needs to be corrected, whether by other sensations or by reason<sup>209</sup>. The nature of bodies consists in their being extended matter endowed with motion. This nature can be grasped by reason alone (by virtue of its use of language), even though it is also the real cause of all our sensory appearances<sup>210</sup>.

## 2.3. Hobbes and Scholastic psychology

### 2.3.1. Images and ideas

All mental processes reduce to physiological reactions, but this does not mean that we live in a constant stream of fleeting impressions. We have memory: images remain in the nervous system like

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<sup>205</sup> See *Leviathan*, pp. 131 and 147.

<sup>206</sup> For discussion, see Leshen, "Reason and perception in Hobbes", 433; Y.C. Zarka, "Empirisme, nominalisme et matérialisme chez Hobbes", in *Archives de Philosophie* 48(1985), 177-233.

<sup>207</sup> *Elements*, 5: "apparation of light without, is really nothing but motion within. (...) That image and colour is but an apparition unto us of that motion, agitation, or alteration, which the object worketh in the brain, or spirits, or some internal substance in the head."

<sup>208</sup> For discussion, see Zarka, "La matière et la représentation", 92-96.

<sup>209</sup> *De corpore*, 104. A similar view was held by Mersenne and Gassendi; those authors assigned a major role to rational thought, however. See also Pacchi, *Convenzione e ipotesi*, 63, and 66-67. In *Il Saggiatore* (1623), Galileo argued that the mathematical approach to physics shows the fallibility of the senses, since sense experience often contradicts the results of mathematical science.

<sup>210</sup> Cf. *Critique du De Mundo de Thomas White*, 449; *De corpore*, 59.

the circles on a pool remain after the drop of a stone<sup>211</sup>. Moreover, we have rationality. Indeed, according to Hobbes there are two types of knowledge: one is called "original", that is, directly generated by sense perception, the other is called "derived", which consists in discursive reasoning concerning propositions and truth<sup>212</sup>. The distinction between these types of knowledge or science is based on the human capacity for retrieving sensory information (images) by means of language<sup>213</sup>. For obvious reasons, a comparison between the psychologies of Hobbes and Peripatetics is bound to concentrate on the first type of knowledge, that is, on the acquisition of primary knowledge resulting in images, representations, ideas, and conceptions<sup>214</sup>.

The phantasm is a mental picture, and it is the bearer of sensible qualities. Thoughts about general features are based on a comparison between phantasms<sup>215</sup>. Concepts or ideas (which are not fundamentally different from images or phantasms<sup>216</sup>) are translations of the motions occurring in the perceptual apparatus<sup>217</sup>. Indeed, Hobbes made no essential distinction between imagery and (primary) cognition. His theory of perception did not envisage any hierarchical ordering between sensory processes and intellectual processes<sup>218</sup>.

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<sup>211</sup> *Elements*, 8.

<sup>212</sup> *Elements*, 24.

<sup>213</sup> *Elements*, 18-24; *De corpore*, 70; *Leviathan*, I, ch. IV.

<sup>214</sup> Hobbes was loose in his use of terms, and he consistently failed to distinguish between the various denominations for the first stage of knowledge. See *Elements*, 2; for discussion, see Balz, "The psychology of ideas in Hobbes", 132-34.

<sup>215</sup> *De corpore*, 324-25; cf. Leshen, "Reason and perception in Hobbes", 431. For another characterization, see *Leviathan*, p. 85: thought is representation or appearance.

<sup>216</sup> Cf. *Elements*, 2: "This imagery and representations of the qualities of things without us is that we call our cognition, imagination, ideas, notice, conception, or knowledge of them"; *De corpore*, 317, where the "causa idearum" is identified with "motus". Cf. *Objectiones ad Cartesii Meditationes*, in *Opera Latina*, vol. V, 258f, where Hobbes argued that the idea is not distinct from sensible intuition.

<sup>217</sup> Cf. *Opera Latina*, vol. V, 263: the idea of the sun in our soul is a "collectio per argumenta"; Pacchi, *Introduzione a Hobbes*, 35-36, and 61; Zarka, "Empirisme, nominalisme et matérialisme chez Hobbes", 191. See, for a similar position, Pierre Gassendi, *Disquisitio Metaphysica*, ed. B. Rochot, Paris 1962, 135f; 213f; 243f; 283f; 519f.

<sup>218</sup> *Elements*, 2-3; cf. J. Prins, "Kepler, Hobbes and medieval optics", in *Philosophia naturalis* 24(1987), 309-10.

One troublesome aspect of Hobbes' approach was already hinted at above. Scientific knowledge is an elaboration of sensory information<sup>219</sup>, and it is only through our reasoning about images that we come to know of the existence of a reality ruled by motion<sup>220</sup>. The human mind is thus locked up within its own world of physiological motion; mental contents are the product of an inference from percipient to external reality. External objects are not totally beyond our reach, for we know that they exist and that their nature consists in magnitude and motion. However, for the mind the images, which are caused in the nervous system by the motions of external objects, constitute only a phenomenal or apparent world.

Hobbes' account of primary knowledge also has certain appealing aspects, first of all because it made a serious attempt at explaining knowledge acquisition in non-circular terms. Perception is seen as the result of a rationally accessible but *unperceivable* mechanical process<sup>221</sup>. Moreover, although Hobbes' psychology was essentially phenomenalist in its outlook, it did not surrender to subjectivism<sup>222</sup>. Now, how does Hobbes' position, as summarized in these two points, compare to Peripatetic views on the acquisition of primary knowledge? To answer this question, it may be helpful first to look at the relation between Hobbes and the Cyrenaics, who developed an account of knowledge acquisition that contrasted with Aristotle's views.

The Cyrenaics accepted Aristotle's account on perception, but they denied that the affections produced in the sensory organs by external objects reveal anything but themselves<sup>223</sup>. According to Plutarchus, the Cyrenaics shut themselves up in their affections<sup>224</sup>.

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<sup>219</sup> *Elements*, 8.

<sup>220</sup> Cf. Brandt, *Thomas Hobbes' Mechanical Conception of Nature*, 355, on the problematic aspect of Hobbes' materialism.

<sup>221</sup> Notice that the dualism between phantasm and object is supported by argument, but that the mechanicism that characterizes their relationship is postulated.

<sup>222</sup> For discussion, see Balz, "The psychology of ideas in Hobbes", 144; Brandt, *Thomas Hobbes' Mechanical Conception of Nature*, 42-43.

<sup>223</sup> For the following analysis I am indebted to St. Everson, "The objective appearance of Pyrrhonism", in *Companions to Ancient Thought*, vol. II: *Psychology*, ed. St. Everson, Cambridge 1991, 121-147.

<sup>224</sup> *Adv. Colot.*, in *Moralia*, vol. XIV, with an English translation by B. Einarson and Ph.H. de Lacy, Cambridge (Ma.)-London 1986<sup>2</sup>, 1120C-D: "(...) the first [namely, the Cyrenaics], placing all experiences and impressions within themselves, thought that evidence derived from them was insufficient warrant for certainty

As in Hobbes, this did not lead them to posit an inner subjective realm, however, because the states that constitute the realm of the Cyrenaic mind are of the same order as those of the external world. The demarcation between the internal and the external is just the physical boundary of the organism. Since perceptual states are only natural affections, the distinction between the 'internal' and the 'external' is not captured by the 'mental' versus the 'physical', or the 'subjective' versus the 'objective'; hence, no principled solipsism is implied<sup>225</sup>.

Hobbes believed that phantasms and ideas are physical responses of the brain to stimulation by external objects. Thus, phantasms and ideas depend on the perceptual apparatus as much as they depend on the external agents of change. They may be said to represent the world beyond the senses inasmuch as they are mechanically produced by that world. Hence, they may be used by man (the rational animal) as a relatively reliable basis for scientific inference about the world. However, since phantasms and ideas are the joint product of a causal interaction between at least two physical agents, it is impossible that they represent the formal *nature* of material things, with the sole exception of magnitude and motion (the two "accidentia communia" of all bodies)<sup>226</sup>.

Aristotle had been convinced that the mind depends on the phantasms for its knowledge of the world, in the sense that phantasms are instruments in the acquisition of knowledge: the mind knows sensible essences, not their perceptual representations. This central assumption of Aristotelian cognitive psychology was taken over by the majority of his medieval and Renaissance followers. In

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about reality and withdrew as in a siege from the world about them and shut themselves up in their responses,—admitting that external objects 'appear', but refusing to venture further and pronounce the word 'are'."

<sup>225</sup> Subsequently, the Sceptics, like the Cyrenaics, challenged the epistemological implications which dogmatic philosophers (the Stoics) had wanted to derive from their causal understanding of perception, but they left unchallenged that understanding itself. Perception is based on appearances, that is, on the affections of the percipient as a physical organism. There is no rupture between the material state of the subject and the subject's sensory experience. Hobbes had nothing to do at all with scepticism, however.

<sup>226</sup> See also J. Bernhardt, "Grandeur, substance et accident: Une difficulté du *De corpore*", in *Thomas Hobbes. Première philosophie, théorie de la science et politique*, eds. Y.Ch. Zarka & J. Bernhardt, Paris 1990, 39-46.

particular, also the advocates of intelligible species believed that the species are essentially information-bearing representations, and not the cognitive object itself.

Hobbes hypothesized the existence of mediating mechanisms of perception that are perfectly amenable to reason. Bodies cause motion in the senses, this motion is transported to the brain and to the heart, and there it causes a reaction that is directed outwards, that is, a perception consisting in images or phantasms. These mechanisms themselves cannot be *perceived*, however; Hobbes believed that what the mind knows is only the *effect* of the mechanisms, and not something they mediate. It is only by rationally *reflecting* upon the phantasms that we know that there is a corporeal world outside, ruled by matter in motion.

### 2.3.2. The critique of sensible and intelligible species

Hobbes repeatedly stressed that he rejected the doctrine of species. His mechanistic physics had no room for either sensible species or intelligible ones. In the *Elements of Law*, he stated that sensible and intelligible species are plainly impossible, and that they are worse than paradox<sup>227</sup>. Also in *Leviathan* he condemned the theory of species<sup>228</sup>. Hobbes' interpretation of the species doctrine tended to be rather idiosyncratic and less than fair. Thus, he neglected the fundamental difference between sensible and intelligible species, indiscriminately regarding them as some kind of flying image<sup>229</sup>, "passing to and from the object"<sup>230</sup>.

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<sup>227</sup> *Elements*, 3-4; cf. *Human Nature*, 4; Pacchi, *Introduzione a Hobbes*, 20; Blay, "Genèse des couleurs et modèles mécaniques dans l'oeuvre de Hobbes", 154.

<sup>228</sup> *Leviathan*, 93: "Some say the Senses receive the Species of things, and delivers them to the Common-sense; and the Common Sense delivers them over to the Fancy, and the Fancy to the Memory, and the Memory to the Judgment, like handing of things from one to another, with many words making nothing understood." See also *Leviathan*, 86, where the Scholastic species theory is charged with a confusion of sensible facts and causes.

<sup>229</sup> *Tractatus opticus* II, 151. This passage seems to be modeled after Descartes' *Dioptric*.

<sup>230</sup> *Leviathan*, 87: "Nay for the cause of *Understanding* also, they say the thing Understood sendeth forth *intelligible species*, that is, an *intelligible being seen*; which coming into the Understanding, makes us Understand." Cf. *De homine*, in *Opera Latina*, vol. III, 7, where the species are qualified as "emissas a re intellecta".

Hobbes' rejection of the species was different from that of Descartes. Descartes replaced the abstracted species by a perceptual idea produced in the mind on the occasion of brain motion. Hobbes saw perception as essentially a reaction: the image or primary idea is an effect of the brain's reacting to external stimuli. Peripatetic psychology had seen the intelligible species as a product of the mind's processing sensory information. According to Hobbes, mental phenomena such as images and primary ideas are the product of purely physiological processes. This explains why he made no sharp distinction between sensible and intelligible species. At the level of primary knowledge, man is no different from the other animals. It is only by dint of language and science that man's grasp of the world may be enlarged.

Descartes rejected the species doctrine because he found it unacceptable to assume that sensory representations may enter the mental realm from without. Hobbes rejected the species doctrine because he found it to be incompatible with his view of the natural world as consisting of substances and accidents. After 1636, Hobbes gave up the idea that species are substances. So, if species existed, they would have to be accidents. But accidents cannot be detached from one subject and passed on to another. Therefore, species do not exist<sup>231</sup>. Peripatetic cognitive psychology analyzed knowledge acquisition in terms of a hierarchically ordered process involving sensory representations and active features of the mind. Hobbes' materialistic psychology analyzed the formation of (primary) intellectual knowledge as an effect of external motions on a particularly endowed body. Thought is the translation of motion into words.

Descartes' theory of ideas had various points of contact with the traditional species doctrine as well as with the medieval opposition against it. Cartesian perceptual ideas, like the intelligible species, are mental representations of characteristic features of sensible objects. Hobbes' philosophy constituted a more profound rupture with Peripatetic thought. He accepted mental representations, but he denied that their contents correspond to objective properties of

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<sup>231</sup> This argument was used many times by critics of the species, too; cf., among others, Agostino Nifo in ch. VI, § 3.2.



the external world. Images and ideas are the products of motion, and have no formal affinity with their causes. "All sense is fancy", as Hobbes famously put it, with the only exception of extension and motion. That the sensible world can be known only through images and ideas does not mean that the real world is inaccessible, however. It is completely accessible to reason, which may see it for what it is: causally connected bodies in motion. But animals have the wonderful ability to add to this world another one, namely, that of the phantasms or appearances. This world is additional, in a sense, but to animals it appears as the primary one as long as they are bound by instinct.

### § 3. PIERRE GASSENDI: EPICUREAN SPECIES

Pierre Gassendi, another representative of early seventeenth-century mechanicism, equally rejected Aristotelian psychology<sup>232</sup>, and like Hobbes he sharply polemicized with Cartesian dualism. Unlike Hobbes and Descartes, however, Gassendi continued to use the term "species", and developed a sort of alternative species doctrine that was strongly influenced by his knowledge of Epicurean works<sup>233</sup>. He replaced the traditional species of the schoolmen with corpuscular films composed of atoms, which he supposed to be hurled off from the surfaces of bodies<sup>234</sup>. In this section I first dis-

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<sup>232</sup> For Gassendi's anti-Aristotelianism, see his *Exercitationes paradoxicae adversus Aristoteleos* (1649) and B. Rochot, "La vie, le caractère et la formation intellectuelle", in *Pierre Gassendi 1592-1655, sa vie et son oeuvre*, Paris 1955, 9-54, on pp. 12-24.

<sup>233</sup> See B. Brundell, *Pierre Gassendi. From Aristotelianism to a New Natural Philosophy*, Dordrecht 1987, 87-91. For Gassendi's reception of Epicurus, see H. Jones, *Pierre Gassendi 1592-1655. An Intellectual Biography*, Nieuwkoop 1981, 205-225; M.J. Osler, "Ancients, moderns and the history of philosophy: Gassendi's Epicurean project", in *The Rise of Modern Philosophy*, ed. T. Sorell, Oxford 1993, 129-143; see also A. Alberti, *Sensazione e realtà. Epicuro e Gassendi*, Firenze 1988, for Gassendi's interpretation of ancient atomism and, in particular pp. 11-12, for his elaboration of Diogenes Laertius' essay on Epicurus in *Animadversiones*.

<sup>234</sup> Notice that Suarez rejected the view that sensible species are corpuscular; cf. *De anima*, 616b. See also Bartholomaeus Mastrius & Bonaventura Bellutus, *Disputationes In Aristotelis Stagiritae Libros De Anima*, Venetiis 1671, 183a. For Epicurus' psychology of perception, see ch. I, § 1.4.1. For a cursory reconstruction of Gassendi's relation to the traditional species doctrine, see O.R. Bloch, *La philosophie de Gassendi. Nominalisme, matérialisme et métaphysique*, La Haye

cuss Gassendi's main lines of criticisms against Cartesian psychology, with a summary of his views on cognition and on the role of species. In passing I shall also touch on Gassendi's moderate scepticism. In the second part of this section I turn to Gassendi's critique of Scholastic psychology, and to his alternative doctrine of species.

### 3.1. *Materialism and scepticism*

Against Descartes, Gassendi was of the opinion that all knowledge is sense-dependent, in the sense that it is based on "species rerum sensibilibus" introduced from without<sup>235</sup>. If mental acts are so dependent on the corporeal world, the human mind cannot be immaterial<sup>236</sup>, for that would preclude the possibility of an "impressio speciei"<sup>237</sup>. Moreover, *pace* Descartes, there can be no fundamental difference between the souls of animals and human beings<sup>238</sup>. Gassendi believed that there is an intimate link between body, imagination, and intellect<sup>239</sup>. All intellectual ideas are sense-depen-

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1971, 20-21; Brundell, *Pierre Gassendi. From Aristotelianism to a New Natural Philosophy*, 87.

<sup>235</sup> Cf. *Objectiones Quintae*, in Descartes, *Meditationes*, 268, 292; *Disquisitio Metaphysica seu Dubitationes et Instantiae adversus Renati Cartesii Metaphysica et Responsa*, ed. B. Rochot, Paris 1962, pp. 139, 263 and 279: "Cum aliunde vero ad notitiam alicujus rei eliciendam, necesse sit, rem agere in facultatem cognoscentem; immittere nempe in illam sui speciem, sive sui specie illam informare: perspicuum videtur ipsam facultatem, cum extra seipsam non sit, non posse illam sui speciem in seipsam transmittere, neque sui notitiam consequenter elicere, sive, quod idem est, percipere seipsam." See also *Syntagma philosophicum*, in *Opera*, Lyon 1658, vol. II, 297b-298a, and Bloch, *La philosophie de Gassendi*, 143. For discussion of the controversy between Gassendi and Descartes, see also Jones, *Pierre Gassendi 1592-1655*, pp. 66-68, and 135-203; R. Tack, *Untersuchungen zum Philosophie- und Wissenschaftsbegriff bei Pierre Gassendi*, Meisenheim am Glan 1974, 85-101.

<sup>236</sup> Gassendi blamed Descartes for reintroducing a sort of Aristotelian agent intellect; cf. *Objectiones*, 336, and *Disquisitio*, 269, where he qualified Descartes as more "seraphic" than Bonaventure. Epicurus and other Hellenistic philosophers argued that an immaterial mind would be causally inert in a material world; cf. ch. I, § 1.4.

<sup>237</sup> *Objectiones*, 337-38. For discussion of Gassendi's critique of the Cartesian pineal gland, see T. Gregory, *Scetticismo ed empiricismo. Studio su Gassendi*, Bari 1961, 92.

<sup>238</sup> *Objectiones*, 270. For Gassendi's noetics and his doctrine of an immaterial soul, see also below § 3.2.4.

<sup>239</sup> *Objectiones*, 272 and 329; *Disquisitio*, 135, 243

dent, and thus “adventitiae”<sup>240</sup>. Indeed, in Gassendi’s polemic writings against Descartes ideas are generally identified with impressed species or images<sup>241</sup>. All these views distinctly resemble those of Hobbes<sup>242</sup>.

Thrown off from the surface of bodies, species communicate accidental properties; therefore, ideas of accidents are most clear<sup>243</sup>. With respect to their origin all ideas are individual<sup>244</sup>; ideas of substances may be formed through inference from species of accidents<sup>245</sup>. Cognition consists in the mental reconstruction of sensible reality on the basis of species, which are the material effects of bodies, not metaphysically connected in any way with the substantial essence of these bodies. Therefore, the human soul has only indirect access to the world, and it can never reach any truly certain knowledge about the substantial nature of reality<sup>246</sup>. Philosophy and science dwell in the phenomenal world<sup>247</sup>.

According to Gassendi, the fact that knowledge is based on species implies that we can never grasp the represented things in

<sup>240</sup> *Objectiones*, 279-280, See Jones, *Pierre Gassendi 1592-1655*, pp. 156-57.

<sup>241</sup> *Objectiones*, 296: “species sive ideas”; p. 331: no ideas without images. *Disquisitio*, p. 143: the species is similar to an “imago corporea”; p. 233: idea is “imago”; p. 245: species and idea are similar; p. 269: “idea seu species seu imago rerum”. See also *Syntagma philosophicum*, 468B. For the distinction between species and idea, see subsection 2.

<sup>242</sup> The *Disquisitio* was written during a period of close contact between Gassendi and Hobbes in Paris. For a general analysis of the relation between the psychologies of Hobbes and Gassendi, see G. Paganini, “Hobbes, Gassendi e la psicologia del meccanicismo”, in *Hobbes oggi*, ed. A. Napoli, Milano 1990, 351-445.

<sup>243</sup> *Disquisitio*, 239.

<sup>244</sup> Cf. *Institutio logica* (1658), ed. H. Jones, Assen 1981, 5.

<sup>245</sup> *Disquisitio*, 237-39, and 247.

<sup>246</sup> *Objectiones*, 271 and 285. This view is connected with Gassendi’s refutation of Descartes’ distinction between objective and formal reality in the ideas; cf. *idem*, 285-90 and *Disquisitio*, 267.

<sup>247</sup> See *Opera*, vol. I, 443A: there is no privileged metaphysical link between material reality and percipient, nor a substantive connection between things and ideas; see also *Opera*, vol. III, 182-185, 203A; vol. V, 148, and vol. VI, 34. For discussion, see Gregory, *Scetticismo ed empiricismo*, 85f; Bloch, *La philosophie de Gassendi*, 22-24, 77f (on agnosticism), 95 (on phenomenism), and 110f (on the link with the nominalist tradition); Jones, *Pierre Gassendi 1592-1655*, 104-110; Alberti, *Sensazione e realtà. Epicuro e Gassendi*, 14. K. Schuhmann, “Zehn Jahre Gassendi-Forschung”, in *Philosophische Rundschau* 29(1982), 271-279, observes on p. 274 that the phenomenality of cognitive objects is characteristic of Gassendi’s thought: philosophy consists in saving the phenomena.

themselves<sup>248</sup>. Paradoxically, then, Gassendi endorsed a theory of species, while at the same time apparently subscribing to the bulk of medieval criticism of the species. Many authors who accepted the species went to all lengths to explain how the mind may gain knowledge of essences by means of accidental species<sup>249</sup>. Other authors, such as Olivi and Ockham, downright rejected the species because it placed a veil between mind and object: all mediating entities terminating the mental act would only obstruct our knowledge of objects<sup>250</sup>. Gassendi just drew this line of criticism to its extreme conclusion: "Cognitio terminatur ad imaginem"<sup>251</sup>. Therefore, the mind has no direct access to the world.

Gassendi's scepticism was directed against the Aristotelian<sup>252</sup> and Cartesian<sup>253</sup> claims on the possibility of knowledge of sensible essences. It also bore on Descartes' argument against the reliability of the senses: it may be reasonable to doubt the reliability of the senses, but to question it in general is just absurd. Yet, Gassendi failed to indicate precisely what the scope of sensory information is: he admitted that it is incomplete, and granted to the human mind an indispensable role in interpreting the data of experience, that is, the appearances. His scepticism was thus of a mitigated kind. Indeed, if inferences that go beyond what is given in experience are accepted as a legitimate source of knowledge, then one is also committed to accept that the human mind is reliable when it carries out these inferences<sup>254</sup>.

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<sup>248</sup> *Syntagma*, 333A.

<sup>249</sup> See, for example, ch. III, § 4.2, and ch. IV, § 1.4.

<sup>250</sup> See ch. III, § 3.4 and ch. IV, § 3.1.

<sup>251</sup> *Institutio logica*, 3.

<sup>252</sup> See also *Opera*, vol. III, 192A: if knowledge is only knowledge through causes, then we would not know anything.

<sup>253</sup> Descartes, by contrast, rejecting the species, believed that our soul has direct access to the substantial essence of the material world; cf. *Meditationes*, 371: "idea repraesentat rei essentiam".

<sup>254</sup> For discussion, see R.H. Popkin, *The History of Scepticism from Erasmus to Descartes*, Assen 1964<sup>2</sup>, pp. 102-107, and 143-148; idem, "Epicureanism and Scepticism in the early 17th century", in *Philomathes. Studies and Essays in the Humanities in Memory of Philip Merlan*, eds. R.B. Pal & R. Hamerton Kelly, The Hague 1971, 346-57, on pp. 347-54; R. Walker, "Gassendi and Scepticism", in *The Skeptical Tradition*, ed. M. Burnyeat, Berkeley-London 1983, 319-336. See pp. 331-32 of the latter study for a comparison with Quine's naturalized epistemology; Quine is more radical: unlike Gassendi, he rules out any *a priori* whatsoever.

### 3.2. *Interpretation and critique of the Scholastic psychology*

In his *Syntagma philosophicum*, Gassendi entered into a number of detailed discussions with the philosophical tradition. His exposition there contained extensive surveys of opinions and doctrines, as well as meticulous refutations<sup>255</sup>. In what follows, I discuss Gassendi's theory of the species and his views on primary knowledge (simple apprehension). Primary knowledge, which depends directly on incoming species, is described as *prolepsis* or *idea*, and also as expressed, intelligible or universal species.

#### 3.2.1. Peripatetic and Epicurean species

Sensible things do not change the state of the sense organs directly, but only through species. At the outset of the sixth book of the *Syntagma*, Gassendi noticed that the "vulgaris interpretatio" of the species makes them "typos, imagines, similitudines". If one sides with Aristotle, who believed that the soul receives the species without matter, it becomes very difficult to say precisely what they are. Gassendi also mentioned other problems with this view of species: (i) how can a "res dividua" be represented by a "res individua"; (ii) how can species originate from sensible things, if nothing can be found to be lacking in the latter; (iii) how can species move the soul if they are accidents; (iv) how can the senses receive uncorporeal effects<sup>256</sup>. These problems at this stage did not lead Gassendi to explicitly reject the Aristotelian species. He merely observed that he wants to accept only the existence of visible species.

In the fifth chapter of book VI Gassendi gave an analysis of visual perception. In a lengthy preliminary survey of traditional opinions he referred to the 'ancient' and medieval opposition

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<sup>255</sup> This constitutes an important difference with Descartes' and Hobbes' approaches to traditional philosophy. See, for example, *Syntagma*, 237A-258B, for a survey of traditional psychologies; see also pp. 398-409A, for a survey of traditional theories of vision. For Gassendi's library, see H. Jones, *Pierre Gassendi 1592-1655*, p. 94.

<sup>256</sup> *Syntagma*, 337B.

against species<sup>257</sup>. He remarked that species are not accidents produced from the potentiality of the medium, as Aristotle and his followers had thought<sup>258</sup>. Then he submitted a series of arguments in behalf of the existence of visible species<sup>259</sup>. Aristotle's theory of perception correctly assumed that perception involves a movement from the object via the medium towards the sense organs. However, this movement should be understood in Epicurean terms, that is, as an incursion of corpuscles<sup>260</sup>.

Now, what exactly is the nature of impressed sensible species? Sense perception involves two distinct moments: first there is a sort of shock ("ictus"), then there remains a trace ("vestigium")<sup>261</sup>. This trace was called "phantasma" by Aristotle, but it is better called species. It serves a function in all sorts of perceptual acts, and therefore it cannot be identified with any kind of iconic image. In his analysis of vision Gassendi repeatedly emphasized that the species are luminous rays of subtle corpuscles, rather than skins or scales<sup>262</sup>. In an earlier chapter Gassendi had already excluded that species are images, thus tacitly departing from an imaginist reading of Epicurus<sup>263</sup>, suggesting rather that they are a like a rope or pole connecting the brain to the external world and driving it toward perception<sup>264</sup>.

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<sup>257</sup> *Syntagma*, 373B: Gassendi mentioned Ockham, Gabriel Biel, Durandus, Gregory of Nyssa, and Porphyry. See ch. I, § 2, for discussion of the 'ancient' opposition against the species theory. Cf. also *Physica*, in *Opera*, vol. I, 443A-B. For discussion, see L. Mandon, *Étude sur le Syntagma philosophique de Gassendi*, New York 1969 (reprint of the 1858 edition), 64-65; Brundell, *Pierre Gassendi*, 96; Bloch, *La philosophie de Gassendi*, 15.

<sup>258</sup> *Syntagma*, 375A.

<sup>259</sup> *Syntagma*, 376B: mirror images, the camera obscura experiment, lightbeams in a dark room, and the perception of illuminated objects from the dark.

<sup>260</sup> *Syntagma*, 377A-B; cf. also pp. 338A and 376A-B for explicit references to Epicurus' doctrine of 'species'.

<sup>261</sup> *Syntagma*, 403B-404A: "Tum autem duo quaedam contingunt, unum, ut quae facultas sentiens illeic degit, rem sensibilem, à qua talis ictus advenit, percipiat; alterum, ut ex tali ictu remaneat quoddam vestigium, seu quasi character, typusque cerebro impressus."

<sup>262</sup> *Syntagma*, 378B; cf. also pp. 404B-405B.

<sup>263</sup> Indeed, the Epicurean *eidolon* cannot be identified with "image", because of the latter's unwanted mental associations. See also G. Paganini, "Hobbes, Gassendi e la psicologia del meccanicismo", pp. 363f for the differences between Epicurus' view of *eidola* and Gassendi's concept of species.

<sup>264</sup> *Syntagma*, 339B. See also *Syntagma*, 404B.

The suggestion that species are like a rope or pole may be taken as an implicit reference to Descartes' theory of perception; in particular, it may be seen as a rephrasing of the metaphor of the blind man and the stick in Cartesian optics<sup>265</sup>. Gassendi adopted Descartes' mechanistic view of the physiology of vision. He did not accept Cartesian dualism, however, nor the nativist account of the origin of perceptual ideas. Perception and cognition in Gassendi were based on incoming species, which were not seen as flying images (as in Descartes' and Hobbes' caricature of the Scholastic doctrine), but as a corpuscular bridge between mind and world.

### 3.2.2. Simple apprehension: impressed and expressed species

Sense perception is based upon contact<sup>266</sup>, and it takes place when corpuscular species enter into the perceptual apparatus<sup>267</sup>. The species induce a change in the sensory organs and are propagated through the nervous system by the animal spirits; eventually they cause an immanent act in the brain, which may be called a (simple) apprehension<sup>268</sup>.

The species of external objects are transmitted by animal spirits along the nerves from the point where the sensory organ connects to the brain. The species that is thus impressed on the brain is not an image or a concept, but it is merely the preliminary condition for producing a "species expressa". The "species expressa" is the image generated by the phantasy when it apprehends the material trace or "species impressa"<sup>269</sup>. In sum, the impressed species is the

<sup>265</sup> Cf. § 1.1.2.

<sup>266</sup> *Syntagma*, 335A-337B, and 353A; cf. the positions of Hobbes and Telesio, discussed above, and in ch. VIII, § 3.2, respectively.

<sup>267</sup> *Syntagma*, 403B.

<sup>268</sup> *Syntagma*, 329A-336A; cf. p. 377B: "Utrumque sit; cū quae imago ex re visa advenit, contexta tota ex radiis ipsius lucis intelligi possit; idcirco Visionis negotium ita videtur concipiendum, ut ipsam tum fieri censeamus, cū radij pupillā traieci, & in appulsu ad membranas humoresque refracti, feriunt Retinam, inque illa imprimentes rei obiectae imaginem, eius apprehensionem in cerebro creant." See also p. 403B. On Gassendi and optics, see O. Bloch, *La philosophie de Gassendi*, ch. I. I shall come back to the difference between perception and cognition.

<sup>269</sup> *Syntagma*, 404A-405B; here Gassendi discussed the theories of Aristotle, Epicurus, and Alexander. See *Disquisitio*, 279, on impressed species as the basis of all knowledge. Notice that Piccolomini identified the "species expressa" with a

effect of external forces that grounds the mental act, while the expressed species is an act of the soul that indicates a sort of mental appearance. The distinction between impressed and expressed species explains, *inter alia*, the difference between 'blind sight' and conscious visual experience<sup>270</sup>.

The distinction between impressed and expressed species figured large in the medieval epistemological debate after Thomas. Fierce opponents of the intelligible species, such as Henry of Ghent and Peter Olivi, categorically denied the existence of impressed species at the intellectual level, as that would entail an intolerable determination of the intellect by the senses. Henry conceded that a "species expressa" may legitimately be admitted in intellectual knowledge, but that it must then be understood as a "habitus", or as an Augustinian "notitia"<sup>271</sup>. Olivi pointed out that if species should be accepted at all, they should be redefined as *exprimens*, that is, the result of the mind's "attentio", rather than as "terminans" or "impressa"<sup>272</sup>. In other words, the mental act as such serves to represent objects, and in this sense it may be called "species"<sup>273</sup>. Intelligible species understood as *exprimens* seem fit to characterize the effect of the mental act, namely the recorded cognitive content<sup>274</sup>. Indeed, Olivi allowed for mnemonic ("memoralis") species, supported in their existence by sensory

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"phantasma illustratum"; see *De humana mente*, 1304 (quoted in ch. IX, § 1.3). See also Javelli (ch. VII, § 2.3) and Zabarella (ch. IX, § 1.1).

<sup>270</sup> See also *Syntagma*, 378A, on the "species impressa in retina", and the "species expressa" as attributed to an "actus facultatis". For the "sensus" as faculty and as function, see *Syntagma*, 328A-29B, and 402B. Notice that Gassendi's account of primary knowledge acquisition is infected by the fallacy of circular reasoning; see also below.

<sup>271</sup> *Quodlibetum* IV, q. 21, in *Quodlibeta*, Venetiis 1613, 201va; *idem*, q. 7, 148vb-149ra: Augustine's concept of "notitia" can be interpreted as a "species expressa". On f. 150ra-51ra, Henry distinguished between three meanings of species in Augustine; the third is "notitia in cognoscente"; see also ch. III, § 1 and 3.2.

<sup>272</sup> See *In II Sent.*, q. 72, 24, and q. 74, 121.

<sup>273</sup> *In II Sent.*, q. 58, 463 and 470f.

<sup>274</sup> *In II Sent.*, q. 74, 112, 116: "(...) quia omnis species memorialis generatur per aliquam actualem cognitionem obiecti, (...) et consimiliter per actum intelligendi generatur species memorialis in materiali utero ipsius intellectus"; see also pp. 121, and 123. In q. 58, 470-73, by contrast, the true species and similitudes are described as the mental acts themselves. As we have seen above, Henry found impressed sensible species acceptable, but categorically rejected all intelligible or intellectual species.



species<sup>275</sup>, and ensuring the objective reference of intellectual acts of recollection. He even gave these species a distinct role to play: it is by virtue of the species stored in memory that we are able to recall absent objects<sup>276</sup>.

As was noted above, Gassendi was critical of the Peripatetic doctrine of species, too. However, in a way he reversed the argumentation of authors such as Henry of Ghent and Olivi, namely, by primarily objecting to the alleged immateriality of the species. Only when they are physiologically embedded can (corpuscular) species successfully ground our intellectual knowledge of the sensible realm. As we have seen, Gassendi accepted the extreme consequence of these impressed species: because they terminate the mental act, there can be no knowledge of things as they are in themselves.

The first stage of knowledge acquisition Gassendi assigned to the phantasy<sup>277</sup>, which he distinguished as simple apprehension from judgment and discursive reasoning<sup>278</sup>. In the *Institutio logica*, the simple apprehension was also variously called “idea”, “species”, “notio”, “praenotio”, “anticipatio”, “conceptus” and “phantasma”. Of these terms, “idea” was seen as the most appropriate one for denoting simple apprehension<sup>279</sup>. Notice that the only ‘real’ things involved in knowledge are the impressed species. Indeed, in the *Disquisitio* Gassendi spoke of the expressed species or idea as a “modus”<sup>280</sup>. Gassendi’s position with regard to the

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<sup>275</sup> See *In II Sent.*, q. 74, 116-117. See also the position of Jandun who argued for a causal role of the inner senses in the preserving the intelligible species; cf. ch. IV, § 4.3.

<sup>276</sup> *In II Sent.*, q. 74, 115-116. Notice that Olivi, unlike Henry of Ghent, did not identify the mnemonic species with the intellectual habits; see q. 74, 114, and 118-19. For a conception of the intelligible species as primarily mnemonic, see also Gregory of Rimini, discussed in ch. IV, § 3.4. Already Albert the Great used the term species to indicate the result of mental operations; cf. ch. II, § 2.1. See also Jean de Paris, *Commentaire sur les Sentences*, Reportation, Livre I, ed. J.-P. Muller, Romae 1961, p. 299-300, ll. 245-250, quoted in ch. III, § 1.4.

<sup>277</sup> For an assimilation of the phantasy to a cognitive faculty in general, cf. Berigardus (discussed in ch. X, § 3.6); cf. also Fracastoro (ch. VI, § 1.5).

<sup>278</sup> *Syntagma*, 409A-412A. This corresponds to the classical Aristotelian division of the intellectual operations. For discussion, see Bloch, *La philosophie de Gassendi*, 138, and 141, where it is shown that there is no intellectual intuition.

<sup>279</sup> See *Institutio logica*, 1-4.

<sup>280</sup> *Disquisitio*, 267. Cf. Bloch, *La philosophie de Gassendi*, 129.

status of mental acts may become clearer if we take a look at his interpretation of the Epicurean notion of *prolepsis*.

### 3.2.3. The *prolepsis* or anticipation

A crucial element in Gassendi's theory of primary knowledge acquisition is his interpretation of the Epicurean concept of *prolepsis*. In his discussion of Epicurus' logic, Gassendi translated *prolepsis* (one of the criteria for true knowledge) by "anticipatio" or "praenotio"<sup>281</sup>, which he regarded as a specific type of species or image that remains in the mind after perception<sup>282</sup>.

In his *Animadversiones* on the tenth book of Diogenes Laertius, Gassendi gave a more detailed account of the Epicurean *prolepsis*. Here he described *prolepsis* as a sort of universal concept by virtue of which we may grasp intelligibles<sup>283</sup>. He adopted Cicero's interpretation of the term as "praesumptio" or "notitia communis", assimilating it to what Aristotle in *Posterior Analytics* had called "praeexistens cognitio"<sup>284</sup>. Gassendi's interpretation of the concept

<sup>281</sup> See already Cicero, *De natura deorum*, I.1. Gassendi also characterized the anticipation or preconception as "notio" or as "definitio"; cf. *Opera*, vol. I, 54B. For discussion, see Gregory, *Scetticismo ed empiricismo*, 128-138, and 142-44; W. Detel, *Scientia rerum natura occultarum. Methodologische Studien zur Physik Pierre Gassendis*, Berlin-N.Y. 1978, 33; Alberti, *Sensazione e realtà*, 39, 49-50; and, in particular, D.K. Glidden, "Hellenistic background for Gassendi's theory of ideas", in *Journal of the History of Ideas* 49(1988), 405-424.

<sup>282</sup> *Opera*, vol. I, 53A: "quia ex quo primum rem percipimus, quoties deinceps eam cogitamus, illius species, sive imago animo observans antecepta fuit; unde & quia praehabetur, Praenotio quoque appellatur." See also *Opera*, vol. I, 292-93 and *Syntagma*, 408A.

<sup>283</sup> *Animadversiones in decimum librum Diogenis Laertii, qui est De vita, Moribus, Placitisque Epicuri*, in *Opera*, vol. V, 63B: "Heinc ergo illi satis fuit ea ostendere, ad quae respicere homo debeat, ut veritatem diiudicet circa genere proposita rerum: tales nempe sunt Sensus vel Sensio respectu Sensibilium; Anticipatio seu Praenotio respectu Intelligibilium".

<sup>284</sup> See *Animadversiones in decimum librum Diogenis Laertii*, 67B and *Posterior Analytics*, I.1. Cicero assimilated the Epicurean *prolepsis* to an innate notion; cf. *Topica*, VII.30: "Notionem appello, quod Graeci tum *énnoian* tum *prólepsis*. Ea [sc. notio] est insita et animo praecepta cuiusque cognitio enodationis indigens". The assimilation of the *prolepsis* to "notio" is also found in the Greek-Latin edition of ps.-Plutarchus [=Aetius], *De placitis philosophorum*, Florentiae 1750, IV.11, 107. Boethius translated the Platonic "idéa" with "praenotio" or "praecognitio", thus assimilating the Epicurean term to a general, inborn concept; cf. J. Hamesse, "Idea chez les auteurs philosophiques des 12e et 13e siècles", in *Idea. VI Colloquio Internazionale del Lessico Intellettuale Europeo*, 99-135, on pp. 101 and 106. This translation also recurred in medieval authors; cf. Hamesse,

thus transcended the bounds of Epicurus' methodology, in which no sharp distinction between physics and psychology had been made<sup>285</sup>. Epicurus had used *prolepsis* to establish an epistemic connection between perceivers and observed regularities in nature. Repeated exposure to instances of a class of things induces in us the ability to discriminately classify the elements of that class, as well as the ability to designate the class in general<sup>286</sup>. By contrast, Gassendi did not think that general ideas are mechanically caused, but that concepts and prenotions are formed by the mind as vehicles of thought. In this respect, his interpretation of the Epicurean *prolepsis* may have been influenced by Scholastic psychology with its requirement that *mental* representations are needed to mediate our grasp of the universal aspects of sensible reality.

### 3.2.4. Intelligible species and ideas

In the *Syntagma* Gassendi asserted that besides the material soul or phantasy, man also has an immaterial intellect that operates both at the level of the phantasy and at a level transcending the organic faculties<sup>287</sup>. The need for such an immaterial soul was pressed by Gassendi to account for a particular feature of man, namely, his capacity for (partially) sense-independent knowledge. Insofar as it is operating at a level of its own, the immortal soul (i) may de-

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o.c., 113. Attacking nativism in the 1660's, Samuel Parker identified innate principles with congenital anticipations; cf. the relevant passage from *Free and Impartial Censure of the Platonick Philosophie*, quoted in J.W. Yolton, *John Locke and the Way of Ideas*, Oxford 1956, 44. Also Richard Burthogge (1638-1694) used the term *prolepseis* for innate principles; see *Organum Vetus & Novum*, in *Philosophical Writings*, ed. M.W. Landes, Chicago-London 1921, 37-38, and *An Essay Upon Reason, and the Nature of Spirits*, London 1694, 33 and 52. Cf. Leibniz, *Nouveaux essais sur l'entendement humain*, "Préface", 49.

<sup>285</sup> For extensive discussion, see Glidden, "Hellenistic background for Gassendi's theory of ideas", who argues that Gassendi goes back on Stoic sources. The Stoic appropriation of *prolepsis* is also indirectly clear from the works of their opponents, such as Plutarchus in his *De communibus notitiis adversus Stoicos*, in *Moralia*, vol. XIII.2, with an English translation by H. Cherniss, Cambridge (Ma.)-London 1971, 1059a-1060b. It will be confirmed during the Renaissance by Justus Lipsius; cf. his *Manuductio ad Stoicam philosophiam*, in *Opera*, 4 vols., Wesel 1675, vol. IV, 706f.

<sup>286</sup> See Diogenes Laertius, *Lives*, X.31; for discussion, see ch. I, § 1.4.1.

<sup>287</sup> In this sense, the *Syntagma* was much more conservative than was the *Disquisitio*.

velop scientific concepts of sensible objects, which do not correspond to individual species, (ii) it may reflect on its own operations, and (iii) it may form universal notions<sup>288</sup>. The immaterial intellect is linked to brain and phantasy, however, and it requires corporeal species to perform its operations<sup>289</sup>. Gassendi's idea of an immortal soul joined to the material one (the source of many perplexities in the critical literature<sup>290</sup>) is strikingly similar to the noetics of Telesio, who in turn was influenced most likely by Scholastic philosophy<sup>291</sup>.

For Gassendi as well as for his Scholastic predecessors, the fact that all cognitive representations have their origin in sense, did not mean that all ideas are sensible. Of incorporeal things, for example, there are no species, but only ideas<sup>292</sup>. Also in our knowledge of the sensible world we use concepts that are so abstract and general that they must have been formed by a mind that transcends the level of sense perception when elaborating sensory information. The species of the phantasy are material, and their nature cannot be changed. Yet, the intellect may process<sup>293</sup> or even 'correct'

<sup>288</sup> *Syntagma*, 440A-441A; see also pp. 252B-53A, 256A-B and 437B for the seed-soul and the immortal soul. According to Brundell, *Pierre Gassendi*, 97, Gassendi did not really argue the formation of universal concepts, since he introduced a theory of operations other than experience to account for the formation of general ideas.

<sup>289</sup> *Syntagma*, 442A-B and 446A.

<sup>290</sup> For a critical discussion, see Brundell, *Pierre Gassendi*, 92-94; Tack, *Untersuchungen zum Philosophie- und Wissenschaftsbegriff bei Pierre Gassendi (1592-1655)*, 197-210: (i) the immortal soul contradicts Gassendian physics, and (ii) the relation between the two souls is not always clear; cf. *Syntagma*, 250A, 628-31, 650. More sympathetic is Gregory, *Scetticismo ed empiricismo*, 221, who argues for the existence of two different levels of argumentation in Gassendi; Gregory's interpretation is critically examined by Tack, *o.c.*, 210.

<sup>291</sup> See *De rerum natura*, books V and VIII. One of the sources of Telesio's distinction between a seed-soul and an immortal intellect may have been the psychology of Albert; cf. *Liber de natura et origine animae*, ed. B. Geyer, in *Opera omnia*, tomus XII, Monasterii 1955, tr. I, c. 5, p. 14a; and *De animalibus*, in *Opera omnia*, ed. A. Borgnet, vol. XII, Parisiis 1891, l. XVI, tr. 1, *passim*. See also Roger Bacon, *Opus maius*, pars V, 9: "Et in homine supervenit ab extrinseco et a creatione anima rationalis, et unitur cogitativae primo et immediate, et utitur ea principaliter sicut suo instrumento speciali, et ab ea fiunt species in anima rationali." For discussion, see my "Elementi aristotelici e polemica anti-peripatetica nella dottrina dell'anima divina di Telesio", in *Verifiche* 21(1992), 351-370, pp. 355-58.

<sup>292</sup> *Opera* I, 297. For the knowledge of the incorporeal reality, see *Syntagma*, 452, 461-3. For discussion, see Mandon, *Étude sur le Syntagma philosophique*, 76-8.

<sup>293</sup> See already *Syntagma*, 442B.

them in the case of specific objects. When the intellect is performing this type of operation, the sensible species assume the status of “signum”<sup>294</sup>.

Gassendi repeatedly emphasized the fact that the relation between his two souls should not be understood in terms of the Peripatetic possible and agent intellect<sup>295</sup>. He pointed out that the notion of an agent intellect for producing the intelligible species is quite problematic. Neither the need nor the function of a distinct agent intellect were convincingly established by the Peripatetics<sup>296</sup>. Moreover, their account remained notoriously unclear about the exact nature of the alleged illumination of the phantasms<sup>297</sup>.

Species may be characterized as intelligible, insofar as they can be perceived by the intellect alone<sup>298</sup>. Some authors believed in the existence of intelligible species as immaterial entities, but this traditional doctrine has already been refuted by many ancient and medieval authors<sup>299</sup>. Also abstracted intelligible species must be rejected, because there is no reasonable explanation for how they are produced: (i) a material phantasm cannot become immaterial; (ii) the phantasy contains no immaterial species at a potential level; (iii) the role of the agent intellect cannot be reasonably explained; (iv) no “creatio ex nihilo” can be accepted. Immaterial species might play a role in our knowledge of God, but (so Gassendi observed) sense-independent knowledge of God is unattainable for us

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<sup>294</sup> *Syntagma*, 454A-B.

<sup>295</sup> *Syntagma*, 437B, 446B. On p. 425, the intellect is compared to the Stoic *hegemonikon*. On p. 450A, however, Gassendi admitted that phantasy and immaterial intellect bear some resemblance to the Aristotelian possible and agent intellect; see also below.

<sup>296</sup> *Syntagma*, 429A-B; cf. 429B-437B, for a survey of the traditional noetics. See 446B, for references to Scaliger, Biel, and Durandus.

<sup>297</sup> *Syntagma*, 440A.

<sup>298</sup> *Syntagma*, 447A: “speciebus, inquam, quae & sensibiles dici possint, quatenus sunt sensuum ministerio haustae, impressaeque Phantasiae; & intelligibiles, quatenus sunt ab Intellectu perceptibiles, appellari valeant”. That species can be perceived seems to suggest that Gassendi committed the fallacy of circular reasoning: the mind is able to perceive because it perceives species. Elsewhere, however, he observed that the species have an instrumental function; see *Syntagma*, 449B.

<sup>299</sup> *Syntagma*, 447A, where he mentioned Themistius, Avempace, Durandus, Henry, Godfrey, Baconthorpe, and Gabriel Biel.

in this life. For as long as the mind operates in the body, the only intelligible species it may use are the phantasms<sup>300</sup>.

As was already apparent from his interpretation of the Epicurean *prolepsis*, Gassendi believed that the acquisition of knowledge involves distinct stages. The same species that is called “phantasm” in the phantasy is better seen as “noema” in the intellect. When the phantasy is affected by the species, the intellect knows the thing represented by the species. Indeed, although the *noema* depends on the phantasm, it may also exist without the represented material things being present<sup>301</sup>. In this context Gassendi reconsidered his earlier critique of Aristotelian cognitive psychology. Thus, in terms of their respective receptivity and activity, the phantasy and the intellect may indeed be compared to the Aristotelian possible and agent intellect<sup>302</sup>. Also, the intelligible species may eventually be accepted as universal (but material) species<sup>303</sup>.

### 3.3. Conclusion: species, anticipation, and idea

Gassendi's views on primary knowledge acquisition in *Syntagma philosophicum* resembled Peripatetic cognitive psychology in a number of ways. Perceptual and mental acts are generated when corpuscular species stimulate the brain. Human knowledge depends essentially on these incoming representative entities, called ‘impressed species’. Although Gassendi's psychology was thoroughly materialistic in its outlook, it drew a clear distinction between the sensible world and the domain of sense perception and

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<sup>300</sup> *Syntagma*, 447A–448B, in particular p. 448B: “Videtur itaque Mens nostra, donec degit in corpore, non aliis uti intelligibilibus speciebus quàm ipsis Phantasmatis, iisque seu meris, seu ipsa vi Mentis veluti modificatis, applicitis, in habitum versis.” A significant anticipation of this position is found in Buridan, who identified the intelligible species with the phantasms in his final *De anima* commentary; see ch. IV, § 3.2.

<sup>301</sup> *Syntagma*, 448A.

<sup>302</sup> *Syntagma*, 450A.

<sup>303</sup> *Syntagma*, 461A: “Verùm, ut demus, praeter species receptas in Phantasia, debere quoque alias Intelligibileis vocatas in Intellectu recipi; species universales rerum materialium à conditionibus quidem singularitatis huius, illiusve materiae abstrahuntur: at non à conditionibus materialitatis, materiae universim sumptae; quando ipsas adhuc materialeis, & cum accidentibus materialibus, puta, quantitate, colore, aliisque id genus repraesentant.”

cognition. He defined the first act of the soul as an 'expressed species', which as a "modus" he ontologically distinguished from the material species it depends on. Simple apprehension is primarily concerned with the accidental properties of perceived objects, in accordance with the fact that species are seen as atomic strings (compared to "ropes" or "poles") hurled off from the surface of individual bodies. Although the essence of material objects remains unattainable for the human soul, Gassendi granted to the human mind the ability to interpret the appearances of objects, and accepted the legitimacy of inferences that go beyond what is immediately given in experience. However, this does not impugn the fact that mental acts are strictly sense-dependent, and that also the immortal soul must rely on material species to perform its inferences.

Perception and primary cognition are produced in reaction to external stimuli. Unlike many of his contemporaries, Gassendi retained the notion of species as a legitimate concept in his philosophy, and he used it to denote both the material basis of cognition and the soul's reaction to corpuscular incursions upon the brain. The traditional term 'species' thus took the place of the Epicurean *eidolon*, as well as that of *phantasma* and *prolepsis*. Gassendi's account of the simple apprehension made no sharp distinction between mental act and representation, variously describing the soul's first operation as "species", "idea", "notio", "praenotio", "anticipatio", and "conceptus". Gassendi sometimes expressed a preference for the term "idea", while at other times using "expressed species" or (when discussing Epicurus) "praenotio" or "anticipatio", the latter two terms as translations of *prolepsis*. All these terms indicate the reaction of the soul, whether as phantasy or as immortal mind, to the impressions made upon the brain.

What was Gassendi's debt to the traditional doctrine of the intelligible species? His account of primary knowledge acquisition was built on a discussion of the philosophical tradition. His cognitive psychology was obviously indebted to Epicurus, but (as Glidden has convincingly argued) his reading of Epicurus was determined by philosophical developments in later Antiquity. Glidden correctly pointed out that Gassendi's interpretation of the Epicurean *prolepsis* goes back on Stoic sources. The systematic

affinity between “anticipatio”, “notio” and expressed species in Gassendi’s account of simple apprehension suggests that we should widen this context to include the medieval and Renaissance Peripatetic tradition as well. After Thomas, the term expressed species was used by Henry of Ghent and Peter Olivi as an equivalent of the Augustinian “notitia” to describe the cognitive act<sup>304</sup>. Other medieval critics, too, such as Godfrey of Fontaines and John Baconthorpe, accepted the intelligible species only insofar as it denoted the act of intellectual conceiving (“intelligere”)<sup>305</sup>. Moreover, “notio”, the Latin translation of the Aristotelian *noema*, was put forward by late medieval authors and by Renaissance Aristotelians (including Nifo, Buccaferrea, and Montecatini) as the only legitimate interpretation of the intelligible species<sup>306</sup>. In his account of primary knowledge acquisition Gassendi made no sharp distinction between mental acts and representations, and thus seemed to be following this tradition of Peripatetic authors, who were critical of the intelligible species, but who did not reject the concept as completely insignificant. This may also explain why Gassendi eventually accepted the intelligible species as a universal concept.

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<sup>304</sup> See ch. III, § 3.2 and 4.

<sup>305</sup> See ch. III, § 3.3 and ch. IV, § 2.2.

<sup>306</sup> See John Malinas, examined in ch. V, § 2.4, and, for the Renaissance, ch. VI, § 3.3 (Nifo), ch. VII, § 3.2 (Buccaferrea and other authors); see also Piccolomini (ch. IX, § 1.3).



## CHAPTER TWELVE

### INNOVATION AND ISOLATION

The publication of Descartes' works caused various types of reaction. Orthodox Protestant and Catholic theologians severely criticized his philosophy, while many schoolmen also simply ignored it. Initially, Descartes' ideas found fertile ground at Dutch universities. Yet, many Dutch authors endorsed Cartesian views without rejecting all of Aristotle's philosophy. In the course of the second half of the century, also many French philosophers embraced Cartesianism. In the same period, Descartes' views found their way into typically Scholastic works such as philosophical manuals and lexica.

The first reactions to Descartes' philosophy came from academic philosophers and theologians in the Netherlands. I describe the development of the Dutch debate on psychology in the first section of this chapter. In the second section I turn to the views of 'post-Cartesian' schoolmen who remained untouched by modern non-Aristotelian psychology. Not all Cartesians shared Descartes' total rejection of the doctrine of species. In the third section I examine the reconsideration of species by later French Cartesians. The final section is an analysis of the views on species as found in the seventeenth-century philosophical lexica.

#### § 1. SCHOLASTICISM AND CARTESIANISM IN THE NETHERLANDS

After the establishment of the first Dutch universities in Leiden (1575) and Franeker (1585), academic philosophy in the Netherlands consisted mainly in expositions on Aristotelian works and studies of authoritative authors, such as Javelli, Zabarella, Piccolomini, Scaliger, Pace, Berigardus, Fonseca, Toletus, and

Suarez<sup>1</sup>. Unlike other European countries, the Netherlands had no medieval Peripatetic tradition to speak of, while the interest in metaphysics<sup>2</sup> and philosophical psychology<sup>3</sup> had traditionally been very limited. In the course of the sixteenth and seventeenth century the authority of Aristotle became generally accepted, but it was not predominant. Erasmus and Lipsius exerted a strong influence on ethical works, and in physical treatises of that time one often finds the names of Vergil and Lucretius.

Seventeenth-century discussions on cognitive psychology in the Netherlands were constrained by two factors: on the one hand, the syncretizing nature of philosophical instruction at universities, and, on the other hand, the rapid assimilation of Cartesian views. Descartes lived in Holland in the 1630's and 1640's, and his philosophical ideas found a fertile ground there<sup>4</sup>.

### 1.1. *Philosophical psychology before Descartes*

The issue of intelligible species was not a hot item among early seventeenth-century philosophers in northern Europe. Some authors did not even mention it, such as Van Goorle and Keckermann<sup>5</sup>. Others, such as Barlaeus, characterized the species

<sup>1</sup> For discussion, see F. Sassen, *Het oudste wijsgerig onderwijs te Leiden*, Amsterdam 1941; P. Dibon, *L'enseignement philosophique dans les universités néerlandaises à l'époque pré-cartésienne*, [Leiden] 1954; S.H.M. Galama, *Het wijsgerig onderwijs aan de Hogeschool te Franeker*, Franeker 1954; H. Robbers, "De Spaans-scholastieke wijsbegeerte op de Noord-nederlandse universiteiten in de eerste helft van de 17e eeuw", in *Bijdragen* 17(1956), 26-55; A.A.M. de Haan, *Het wijsgerig onderwijs aan het Gymnasium Illustre en de Hogeschool te Harderwijk, 1599-1811*, Harderwijk 1960; J.P. Donnelly, "Calvinist Thomism", in *Viator* 7(1976), 441-55, on p. 442f; Th. Verbeek, *Descartes and the Dutch. Early Reactions to Cartesian Philosophy, 1637-1650*, Carbondale and Edwardsville 1992.

<sup>2</sup> See Verbeek, *Descartes and the Dutch*, p. 6.

<sup>3</sup> Incidentally, psychological issues were also discussed in treatises on general anthropology; cf. Ioachim Ringelbergius, *Liber de homine*, Antverpiae 1529. Works of this kind were not read at the universities, however.

<sup>4</sup> Descartes joined the army of Maurice of Nassau in 1618. His friendship with Beeckman in 1618-19 woke him up to scientific questions. He matriculated as a student at Franeker in 1629 (see S.H.M. Galama, *Het wijsgerig onderwijs aan de Hogeschool te Franeker*, 23-24), and in 1630 at Leiden (Verbeek, *Descartes and the Dutch*, 34). He lived in Holland, with brief interruptions, from 1628 until 1649.

<sup>5</sup> David Gorlaeus, *Exercitationes Philosophicae quibus universa fere discutitur Philosophia Theoretica*, [Lugd. Bat.] 1620, was mainly interested in logic and physics. Keckermann, an important influence on many Dutch authors, emphasized

as a problematic notion<sup>6</sup>. In his refutation of Aristotelian natural philosophy, Sebastiano Basso cast doubt on the internal coherence of the species doctrine<sup>7</sup>. Isaac Beeckman used the term, but he rejected the traditional doctrine of species<sup>8</sup>. Daniel Voet was influenced by Aristotle as well as by Gassendi, but he analyzed the physiology of vision without invoking species<sup>9</sup>.

### 1.1.1. Franco Burgersdijk

Franco Burgersdijk<sup>10</sup> was one of the leading philosophers at the university of Leiden in the seventeenth century. His psychological

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that intellectual knowledge requires the presence of an intentional "imago obiecti intelligibilis", which he identified with the phantasm; cf. Bartholomaeus Keckermannus, *Systema Physicum*, in *Opera Omnia*, tomus I, Coloniae 1614, p. 1602; on p. 1603 he referred to Zabarella (see indeed ch. IX, § 1.1), and to Scaliger for the status of these images. For the necessity of an agent intellect, he quoted Zabarella and Melancthon; the function of the agent intellect is not to abstract intelligible species, but to illuminate, that is, to elucidate the confused images impressed upon the possible intellect; cf. pp. 1604-1608.

<sup>6</sup> Caspar Barlaeus, *Oratio de animae humanae admirandis (....) cum Libros Aristotelis de Anima interpretaretur*, Amstelodami 1635, pp. 11-12. For discussion of Barlaeus, see Robbers, "De Spaans-scholastieke wijsbegeerte op de Noord-nederlandse universiteiten", 43.

<sup>7</sup> See Sebastiano Basso, *Philosophiae naturalis adversus Aristotelem libri XII. In quibus abstrusa Veterum Physiologia restauratur, & Aristotelis errores solidis rationibus refelluntur*, Amsterodami 1649, 513-519: the transport of species raises unsolvable problems. For Basso's knowledge of Renaissance Aristotelians, see Book III, 117f.

<sup>8</sup> See *Journal tenu par Isaac Beeckman de 1604 à 1634*, ed. C. de Waard, 4 vols., La Haye 1939-1953, vol. I, 99: "Sententia philosophorum fermè omnium est, visum esse momentaneum, id est, uno momento lucem, vel species quas vocant, à re visâ ad oculum nostrum pervenire, quam sententiam, licet tot et tantos autores habeat, veritati non esse consentaneum definivimus antehac." See also pp. 28, 92, 100, and 136; and vol. III, 49, 57-58, where he rejected Lucretius' conception of "simulacra".

<sup>9</sup> Daniel Voet, *Physiologia*, Amstelodami 1661, 88f. In psychology, Voet followed Aristotelian schemes and rejected Descartes' physiology and his conception of the pineal gland; see K. Dieckhöfer, "Bemerkungen zur *Physiologia* des Niederländers Daniel Voet", in *Janus* 65(1978), 283-96, in particular pp. 287-290.

<sup>10</sup> Franco Burgersdijk, 1590 Lier (near Delft)—1635 Leiden; 1610-1614, studied philosophy at Leiden; 1614-1619, travelled in France, and taught philosophy there; 1620-1635, taught logic, ethics, and physics at the University of Leiden; 1629, 1630, and 1634, rector of the university (1630, Descartes matriculated). For discussion, see L. Thorndyke, "The cursus philosophicus before Descartes", in *Archives internationales d'histoire de la science* 4(1951), 16-24, on pp. 21f; J. Ferrater Mora, "Suarez and modern philosophy", in *Journal of the History of Ideas* 14(1953), 540; Dibon, *L'enseignement philosophique*, 90-123; Robbers,

views were heavily influenced by the later Spanish schoolmen. In *Idea philosophiae naturalis* he professed that the intellect knows first the particular things and then the universals<sup>11</sup>. Intellectual conceiving cannot be based on phantasms, but requires intelligible species both of universals and of singulars<sup>12</sup>. The intelligible species of singulars are imprinted by the phantasms, while the species of universals are generated by the intellect itself "per abstractionem"<sup>13</sup>. Like other authors before him (for example, Scaliger and Suarez), Burgersdijk questioned the need for an agent intellect, and concluded that the intellect may be called "agens" insofar as it generates concepts after being informed by the species<sup>14</sup>.

Burgersdijk returned to a discussion of Peripatetic psychology in his *Collegium physicum*. There it is said that species are needed to connect the intellect with its object<sup>15</sup>. Burgersdijk underlined the need for impressed species by arguing that the expressed species are not sufficient to ground intellectual knowledge. At first sight this claim may seem puzzling, considering the fact that in the Peripatetic tradition the impressed species had been a necessary condition for developing expressed species, the latter being generally taken in the sense of "verbum mentis", that is, mental act or concept. Like Zabarella and Piccolomini<sup>16</sup>, however, Burgersdijk

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"De Spaans-scholastieke wijsbegeerte op de Noord-nederlandse universiteiten", 26 and 33; Ch.B. Schmitt, "Philosophy and science in sixteenth-century universities", in *The Cultural Context of Medieval Learning*, eds. J.E. Murdoch & E.D. Sylla, Dordrecht-Boston 1975, 492; *Franco Burgersdijk (1590-1635). Neo-Aristotelianism in Leyden*, Amsterdam 1993, eds. E.P. Bos and H.A. Krop, Amsterdam 1993.

<sup>11</sup> *Idea philosophiae naturalis sive Methodus definitionum & controversiarum Physicarum*, editio secunda, Lugduni Batavorum 1627, 117. See also *Collegium physicum*, Amstelodami 1650, 325-26.

<sup>12</sup> *Idea philosophiae naturalis*, 117-118: "Ad intellectionem non sufficit, phantasmata, id est, species rerum singularium in sensu interno formatas, intellectui objici; sed requiritur praeterea, ut species intelligibiles intellectu imprimantur, non solum universalium, sed etiam singularium." In support of this view, he cited the College of Coimbra, Toletus, and Zabarella.

<sup>13</sup> *Idea philosophiae naturalis*, 118.

<sup>14</sup> *Idea philosophiae naturalis*, 118-119.

<sup>15</sup> *Collegium physicum*, 328: "Porro ipsae res objectae (ut de modo intelligendi jam dicam) non recipiuntur ab intellectu. Quare concedendae sunt imagines ac typi, sive species, quarum opera intellectus res objectas percipere atque intelligere dici queat."

<sup>16</sup> See ch. IX, § 1.1 and 3; see also Gassendi, in ch. XI, § 3.2.2.

used the term “expressed species” for phantasms representing singular things. Impressed species, which inhere in the intellect as an accident in its subject, ground the union between intellect and object. The need for impressed intelligible species does not entail that the species can be identified with the intellection, for the species may persist after the intellectual act. Nor do the intelligible species move the intellect towards knowledge—a role that was assigned to the phantasms. Intelligible species have a specifically *intentional* function:

“(…) quia intellectionem terminant, ita ut, cum intellectus ad illas intendit, res ipsas in illis, & per illas intelligat.”<sup>17</sup>

In medieval disputes on intelligible species opponents often charged them with “terminating” the cognitive act and thus standing in the way of a grasp of the object<sup>18</sup>. Burgersdijk was apparently happy to endorse precisely this consequence. At the same time, however, he emphasized that the species plays an instrumental role.

Burgersdijk initially looked upon the agent intellect as being responsible for the production of the intelligible species. The agent intellect has a twofold operation, namely, to illuminate the phantasms by making them actually intelligible, and to produce the intelligible species in the possible intellect with the aid of the illuminated phantasms. It is through these species that external things are known<sup>19</sup>. Burgersdijk pointed out that this account is faced with a number of problems, however. In the first place, it is difficult to decide whether the agent intellect illuminates by means of a material or an immaterial light; if the latter, it cannot touch the phantasms, while if the former, the phantasms are not made actually intelligible. Moreover, it remains unclear what it is that the illumination does with the phantasms. Some authors have suggested that it is a separation of universal and individual aspects; yet, the intellect knows the singulars. In the third place, how does the agent intellect produce the intelligible species, and why is it an un-

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<sup>17</sup> *Collegium physicum*, 329.

<sup>18</sup> See the positions developed by Peter Olivi (ch. III, § 3.4) and Ockham (ch. IV, § 3.1).

<sup>19</sup> *Collegium physicum*, 329-330.

knowing faculty that does so? Finally, the assumption of a distinct agent intellect suggests by implication that the possible intellect perishes with the body, which is absurd.

Burgersdijk observed that all these problems can be accounted for if we let go of the assumption of an agent intellect, and endorse the view that the possible intellect is moved to cognition by the phantasms. Against the latter view, it may be objected that material phantasms cannot move the immaterial intellect. This objection does not hold, however, because the (intelligible) species is immaterial by virtue of its reception in an immaterial subject<sup>20</sup>, namely, the intellect, which is seen as both receptive and active<sup>21</sup>.

Burgersdijk gave an original interpretation of Peripatetic cognitive psychology. He was undoubtedly influenced by Scaliger's and Suarez's criticism of a distinct agent intellect when he argued that by heeding the unity of the intellectual soul many problems in connection with the illumination of phantasms can be avoided. His account of the generation of intellectual cognition, including the production of mental representations by phantasms, was naturalistic, yet it did not impugn the immanence and immateriality of mental acts. The mind is moved by sensory representations, but the impressed intelligible species arise within the mind itself. In this respect his construction was a return to a genuine form of Aristotelianism, similar to the position espoused by Buridan in the fourteenth century<sup>22</sup>.

### 1.1.2. Daniel Sennert

Sennert's natural philosophy endorsed basic claims of Peripatetic psychology in a 'medieval' key. Against Scaliger he argued for the existence of a distinct agent intellect to transfer the intellect's object "de ordine in ordinem", that is, to make the phantasm proportionate to the mind<sup>23</sup>. Moreover, the agent intellect is needed to

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<sup>20</sup> According to Peripatetic philosophy, whatever is received is affected by the nature of the recipient: "Omne quod recipitur, recipitur modo recipientis".

<sup>21</sup> *Collegium physicum*, 330-332.

<sup>22</sup> See ch. IV, § 3.2.

<sup>23</sup> Daniel Sennertus, *Epitome naturalis scientiae*, editio tertia, Wittenbergae 1633, 658: "Intellectus itaque agens hac de caussa necessarius est, ut omnia faciat, scilicet quoad Esse intellectualem, hoc est, ut objectum de ordine in ordinem trans-

actualize the possible intellect by producing in it an intelligible species in cooperation with the illuminated phantasm<sup>24</sup>. The operations of the agent intellect with respect to phantasm and possible intellect are distinct:

Nam phantasmatibus jungitur ante intellectionem, & quidem in phantasia adhuc existentibus, ubi eadem illustrans fit illorum forma, qua constituuntur objectum motivum intellectus patibilis: postea junctis phantasmatibus illuminatis agit in intellectum patientem, producendo in eo speciem intelligibilem, & per consequens ipsum actum intelligendi.<sup>25</sup>

The agent intellect joins itself to the phantasms as their form<sup>26</sup>. This conjunction is the object that moves the mind: it produces the intelligible species and, by consequence, also the mental act.

The agent intellect does not know "formaliter" but only "effective"<sup>27</sup>, that is, it knows insofar as it produces intelligible species or notions. Discussing the views of Zabarella as put forth in his work on intelligible species, Sennert came to the conclusion that cognition does not coincide with the generation of intelligible species, but consists rather in their being received and judged<sup>28</sup>.

Sennert described the object involved in the intellectual act, that which moves and terminates the mind, as "ens universaliter sumptum", encompassing material as well as immaterial things. This object needs to be abstracted, and insofar as it is proportionated by the agent intellect it is called intelligible species. Thus, intelligible species are illuminated phantasms, divested from mate-

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ferat. Nam cum objectum sive phantasma materiale sit, atque ita sub opposita conditione potentiae intelligentis, quae abstracta est: ab intellectu intelligi nequit, nisi fiat intellectui proportionatum, abstractum & immateriale: ita autem fieri minime potest, nisi à virtute abstracta & à natura intelligente." Notice that the phantasm is regarded as the (potential) cognitive object. Also Aquinas and, with due qualifications, Toletus regarded the phantasm as "objectum" of the agent intellect, in the sense that the latter elaborates the sensory representation; cf. ch. II, § 3.5, and ch. X, § 1.3.

<sup>24</sup> *Epitome naturalis scientiae*, 659.

<sup>25</sup> *Epitome naturalis scientiae*, 659-60.

<sup>26</sup> For a similar construction, see Taddheus of Parma, *Quaestiones de anima*, ed. S. Vanni Rovighi, Milano 1951, 167-69, discussed in ch. IV, § 4.4.

<sup>27</sup> Later schoolmen frequently applied a similar distinction to the intelligible species, regarding it as an "effective" but not a "formal" representation; cf. ch. X, *passim*.

<sup>28</sup> *Epitome naturalis scientiae*, 662-63; for Zabarella's views, see ch. IX, § 1.1.

rial conditions, and impressed upon the possible intellect<sup>29</sup>. Sennert argued against Scaliger that the accidental status of the intelligible species does not jeopardize the possibility to know substantial essences<sup>30</sup>.

Sennert was a representative of the naturalistic strand in the Peripatetic tradition as interpreted by medieval masters of arts. He formulated a psychology of cognition that shows significant resemblances with the position of Buridan and that of some medieval Averroists. With the latter he shared the account of the relation between agent intellect and phantasms, with the former the identification of illuminated phantasm and intelligible species.

### 1.1.3. Van Isendoorn and Deusing

Van Isendoorn submitted a traditional form of Scholastic psychology<sup>31</sup>. The phantasm offers to the agent intellect the thing to be known. The illumination of the phantasm may give rise to intelligible species, which are described as qualities representing the intelligible object, and determining the intellectual act. Van Isendoorn distinguished between impressed species (which direct the intellect toward its objects) and expressed species (which are the end result of cognitive activity)<sup>32</sup>. Intellectual conceiving may be compared to the process of heating: to fire corresponds the intellect, to heat the intelligible species, to heating the mental act, and to product the "verbum mentis" or expressed species<sup>33</sup>.

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<sup>29</sup> *Epitome naturalis scientiae*, 664.

<sup>30</sup> *Epitome naturalis scientiae*, 664: "Quare etiam sola accidentia speciem efficiunt in intellectu (...). Quibus ablatis ipsius opere intellectus remanet species substantialis universalis: velut si personatum aut armatum videas aliquem: arma prius deprehendas, mox iis detractis, hominem ipsum." For Scaliger's perplexity concerning knowledge of substances through accidental species, see ch. IX, § 2.2.

<sup>31</sup> See Verbeek, *Descartes and the Dutch*, 97.

<sup>32</sup> Gisbertus ab Isendoorn, *Physiologia peripatetica*, Daventriae 1643 (second edition), 395. For discussion, see A.A.M. de Haan, *Het wijsgerig onderwijs aan het Gymnasium Illustre en de Hogeschool te Harderwijk, 1599-1811*, 41f, and 151; idem, "Geschiedenis van het wijsgerig onderwijs te Deventer", in *Deventer denkers. De geschiedenis van het wijsgerig onderwijs te Deventer*, eds. H.W. Blom, H.A. Krop & M.R. Wielema, Hilversum 1993, 29-122, on pp. 58-74; Verbeek, *Descartes and the Dutch*, 97.

<sup>33</sup> *Physiologia peripatetica*, 398-99.



Deusing's reflections on psychology were marked by a strongly syncretizing tendency<sup>34</sup>. This is clear from his Platonizing description of the possible and agent intellect: the former is regarded as the rational power of the sensitive soul, or as "imago mentis", while the latter is defined as the image of the divine mind<sup>35</sup>. The agent intellect illuminates the phantasms and thereby uncovers the essences contained in them. Moreover, it actualizes the sensitive soul, that is, it provides the possible intellect with intelligible species, which mediate between the intellect and its objects<sup>36</sup>.

Deusing's syncretistic psychology reminds of that of Berigardus. It assimilated the possible intellect to the sensitive soul, and claimed that the possible intellect for its knowledge depends on a divine (agent) intellect. Yet, this Platonism did not lead Deusing to relinquish the basic tenets of Aristotelian naturalism with regard to knowledge acquisition.

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<sup>34</sup> Cf. Antonius Deusingius, *De anima humana dissertationes philosophicae*, Hardervici 1645, where he discussed and assimilated Plato, Aristotle, the Stoics, Hermes Trismegistus, Plotinus, Themistius, Philoponus, Ammonius, Averroes, Ficino, Fernel, Scaliger, Zabarella, Piccolomini, and Bacon. An illustrative example of Deusing's syncretism is his postulate of the existence of a world-soul. For discussion, see De Haan, *Het wijsgerig onderwijs (...) te Harderwijk*, 21-36; Verbeek, *Descartes and the Dutch*, 8.

<sup>35</sup> *De anima humana dissertationes philosophicae*, 123-24; cf. 131: only the agent intellect is immortal, because a "vera mens". For his doctrine of the world-soul, see De Haan, *Het wijsgerig onderwijs (...) te Harderwijk*, 25f.

<sup>36</sup> *De anima humana dissertationes philosophicae*, 124 and 129-30.

### 1.2. *First reactions to Descartes*

Descartes' philosophy was rapidly assimilated by Dutch academic philosophers, but many of them mixed the new Cartesian views with Peripatetic philosophy. Thus, Heereboord and Clauberg presented Cartesian views in terms of Scholastic concepts and categories, while De Raey was convinced that there is a profound similarity between Cartesianism and Aristotelianism.

#### 1.2.1. *Adriaan Heereboord*

Adriaan Heereboord was a late convert to Cartesian philosophy<sup>37</sup>. He was less a champion of Cartesianism than a profoundly eclectic author. In a letter of 1648, for example, he recommended not only the work of Descartes, but also that of 'modern' authors such as Valla, Agricola, Vives, Ramus, Telesio, Pico, Patrizi, Campanella, and Bacon<sup>38</sup>. Like Regius he was influenced by Gassendi, as is also clear from his psychological views.

Heereboord defined the rational soul as a "tabula rasa", and denied the existence of innate species. Intellectual conceiving depends on the species which the mind receives from the senses:

Intelligere dicitur, cum rerum intelligibilium species recipit [sc. intellectus] a sensu. Recipit intellectus à sensu rerum intelligibilium species: vel immediate, propriè et proximè, ut cum actu intelligit singularia & materialia; vel mediate, impropriè & remote, & tum intelligit actu universalia et immaterialia.<sup>39</sup>

Heereboord made no sharp distinction between phantasms and intelligible species; the two can be identified insofar as phantasms are delivered to the mind:

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<sup>37</sup> For discussion, see P. Dibon, *L'enseignement philosophique*, viii, 116; R. Specht, *Commercium mentis et corporis. Über Kausalvorstellungen im Cartesianismus*, Stuttgart-Bad Cannstatt 1966, 69-71; Verbeek, *Descartes and the Dutch*, 35-37.

<sup>38</sup> Cf. H. De Dijn, "Adriaan Heereboord en het Nederlandse Cartesianisme", in *Algemeen Nederlands Tijdschrift voor Wijsbegeerte* 75(1983), 56-69.

<sup>39</sup> Adrianus Heereboord, *Meletemata philosophica, accedunt Philosophia Naturalis cum novis commentariis & Pneumatica*, Amstelodami 1665, 107a-b.

Phantasma vocatur species intelligibilis, quae primum fuit sensu percepta, & inde ad intellectum delata: tali Phantasmate non eget anima in cognitione intuitiva, sed in abstractiva tantum.<sup>40</sup>

The intellect first knows particular entities, through comparison of which it may come to grasp universal aspects and form a universal concept. The intellect is passive insofar as it receives the species, active when it knows “per eas”, and passive again in receiving the intellection. Being on the whole more passive than active, the mind depends on the object as its occasion or “causa procatactica”<sup>41</sup>. No agent intellect is needed: the intellect is agent insofar as it forms concepts by itself, stirred by the phantasms.

Heereboord developed an eclectic psychology of cognition. While he was one of the first Dutch philosophers to assimilate Cartesian ideas, he did not endorse Descartes’ central tenet of the intra-mental production of intellectual knowledge. His philosophy was rather a form of naturalism in Gassendi’s style, but then in a more traditional Scholastic guise.

### 1.2.2. Henricus Regius

Henricus Regius<sup>42</sup>, another early Dutch Cartesian, disagreed with Descartes’ psychology on two vital issues: he believed that the union of mind and body is merely accidental, and he rejected the innatism espoused by Descartes<sup>43</sup>.

<sup>40</sup> *Meletemata philosophica*, 109b. For the difference between intuitive and abstractive knowledge, see ch. IV, § 1.1, and 3.1.

<sup>41</sup> *Meletemata philosophica*, 107b-108b. The term “causa procatactica” has a Stoic and Galenic background. It played a central role in van Helmont’s pathology: a “causa procatactica” may occasion a sickness. In Heereboord and Clauberg, this term was used for occasional causes; see Specht, *Commercium mentis et corporis*, pp. 112-113, and 165-172.

<sup>42</sup> Henricus Regius, or Henri de Roy, 1598—1679; for discussion, see M.J.A. de Vrijer, *Henricus Regius. Een “Cartesiaansch” hoogleeraar aan de Utrechtsche Hoogeschool*, ’s-Gravenhage 1917; Dibon, *L’enseignement*, 205; K. Dechange, *Die frühe Naturphilosophie des Henricus Regius*, Münster 1966; K. Rothsuh, “Henricus Regius und Descartes: neue Einblicke in die frühe Physiologie des Regius (1640-1641)”, in *Archives internationales d’histoire des sciences* 21(1968), 39-66; K. Rothsuh & K. Dechange, “La tradition et le progrès dans la *Physiologia* (1641) de Henricus Regius et ses relations avec les idées de Descartes”, in *XIIe Congrès International d’Histoire des Sciences*, Paris 1970, vol. III.B, 109-112.

<sup>43</sup> The thesis of the accidental union of mind and body was put forward by Regius in *Explicatio Mentis Humanae*, which rests on *Fundamenta physices*, cap.

Regius characterized the mind as the principle of all thought<sup>44</sup>. Like Descartes, he believed that the mind is completely distinct from the body. The mind and the body have only an accidental union. The connection between the two is based on a "lex immutabilitatis naturae"<sup>45</sup>. Yet, as long as the mind is incorporated in the body it is "organic", that is to say, all of the mind's operations depend essentially on the body:

Mens humana, quamvis sit substantia à corpore realiter distincta, in omnibus tamen actionibus, quandiu est in corpore, est organica.<sup>46</sup>

Connected to this view of the "organic" mind is Regius' rejection of nativism. No innate ideas are required, because the mind has the intrinsic capacity to generate all possible notions. This means that all ideas are "adventitiae" or acquired<sup>47</sup>. Regius agreed with Descartes' view of the pineal gland<sup>48</sup>, however, and with his rejection of the intentional species:

Omnis sensus est perceptio alicujus motûs corporei, quae nullas species intentionales desiderat: isque fit, non in externis sensoriis, sed solo cerebro.<sup>49</sup>

This view of sense perception explained the acquisition of empirical knowledge in basically circular terms, perception at the mental

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XII, and which was also reprinted as *Programma* in Descartes, *Oeuvres*, VIII.2, 341-4. For discussion, see Verbeek, *Descartes and the Dutch*, pp. 14-15, and 17; for an analysis of Regius' controversy with Descartes, see pp. 52-61, and of the same author: "Ens per accidens: Le origini della Querelle di Utrecht", in *Giornale critico della filosofia italiana* 71(1992), 276-288; "Le contexte historique des *Notae in programma quoddam*", in *Descartes et Regius. Autour de l'Explication de l'esprit humain*, ed. Th. Verbeek, Amsterdam 1993, 1-33. See also G. Rodis-Lewis, "Problèmes discutés entre Descartes et Regius: L'ame et le corps", in *Descartes et Regius. Autour de l'Explication de l'esprit humain*, 35-46.

<sup>44</sup> *Programma*, th. 1, in Descartes, *Oeuvres*, VIII.2, 342; cf. *Philosophia naturalis*, Amstelædami 1661, 335; *Brevis explicatio mentis humanae sive animae rationalis*, Trajecto ad Rhenum 1657<sup>2</sup> (first edition 1648), p. 17.

<sup>45</sup> See *Programma*, th. 10, AT VIII.2, 344; *Philosophia naturalis*, 417.

<sup>46</sup> *Programma*, th. 6, AT VIII.2, 343-44; cf. *Brevis explicatio*, p. 21.

<sup>47</sup> *Programma*, th. 13, AT VIII.2, 345; *Brevis explicatio*, p. 25; *Philosophia naturalis*, 419 and 430.

<sup>48</sup> See *Philosophia naturalis*, 409; *Programma*, th. 13; *Brevis explicatio*, 25.

<sup>49</sup> *Programma*, th. 19, AT VIII.2, 346; *Brevis explicatio*, p. 26-30; *Philosophia naturalis*, p. 370, and p. 429: "Quod autem ad sensus excitandos, nec species intentionales, nec qualitates spirituales, nec aliae res non intelligibiles, ab objectis ad sensoria venentes, requirantur; sed solus motus localis ejusque varietates hic sufficiant, ex titillationis, doloris, sonorum, & luminis, ab objecti corporis motu orti, perceptione, est manifestum."

level being explained as a perception of motion. Regius did not explain the nature of perception itself<sup>50</sup>. In *Philosophia naturalis*, Regius initially seemed keen on avoiding this circularity, defining sense perception as a *reception* of motion<sup>51</sup>. Later, however, he returned to his circular definition of sense perception<sup>52</sup>.

Regius rejected the Peripatetic species as well as Cartesian innate ideas. His alternative was to view the mind as a “tabula rasa” that produces ideas when perceiving brain motions. He surprisingly even spoke of “ideae impressae” originating from local motions<sup>53</sup>. Regius’ adherence to the central Peripatetic tenet that all knowledge is sense-dependent, so we may conclude, merely led him to substitute sensory stimuli for sensible species, and ideas for intelligible species.

### 1.2.3. Johannes de Raey

Regius’ student De Raey (or De Raei) saw Aristotelian and Cartesian accounts of knowledge acquisition as basically complementary to one another. From Descartes he borrowed the view that sense perception as well as intellectual thought are mental operations<sup>54</sup>. He looked upon Aristotle’s epistemology as a reasonable explanatory model for the dynamics of sense perception, but he added to this that the Scholastics had been wrong in taking also intellectual thought to depend on sensory images.

In his *Clavis philosophiae naturalis Aristotelico-Cartesiana*, De Raey drew the outlines of his syncretistic psychology of cognition. All knowledge is based either on perception or on intuition<sup>55</sup>.

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<sup>50</sup> See also *Brevis explicatio*, p. 30. For a similar position, see Campanella examined in ch. VIII, § 3.5).

<sup>51</sup> See *Philosophia naturalis*, 370.

<sup>52</sup> See *Philosophia naturalis*, p. 429, where “qualitatum sensibilium sensatio” is explained as “motuum quorundam localium perceptio”.

<sup>53</sup> *Philosophia naturalis*, 430. A similar position was espoused by Hooke; cf. ch. XIII, § 2, introduction.

<sup>54</sup> See *De mentis humanae facultatibus*, in Joannes de Raei, *Clavis philosophiae naturalis Aristotelico-Cartesiana*, editio secunda aucta *Opusculis philosophicis*, Amstelodami 1677 (first edition 1654), p. 297. For discussion of De Raey (1622—1707), see Verbeek, *Descartes and the Dutch*, pp. 48 and 71-72; idem, *De vrijheid van de filosofie. Reflecties over een Cartesiaans thema*, Utrecht 1994.

<sup>55</sup> Joannes de Raei, *Clavis philosophiae naturalis Aristotelico-Cartesiana*, p. 33.

Sense perception may be reduced to touch<sup>56</sup>. The imagination or phantasy reacts to the (effects of the) motions of the animal spirits like the external senses react to the impinging of material things on the sense organs<sup>57</sup>. In perception, however, the features of external objects are captured only in a defective way<sup>58</sup>. Indeed, the true nature of sensible qualities is inaccessible to perception, for otherwise also children and madmen would know them<sup>59</sup>.

In the treatise *De cognitione humana* De Raey gave a more detailed account of his epistemology. There he characterized cognition generically as “repraesentamen rei in intellectu”. The mind has an inborn faculty for generating “repraesentamina”<sup>60</sup>. Things are known through ideas, which “vulgarly”<sup>61</sup> are also called “species”:

seu ut vulgo loquuntur, per species tantum cognoscit mens nostra. Ut idea *idea* & species *eidos* idem sint quod conceptus & notio: nisi quod idea species, & notio eorum quae cognoscimus apprehensionem, conceptus videatur comprehensionem significare.<sup>62</sup>

De Raey thoroughly assimilated species, notions, concepts, and ideas. On the one hand, he agreed with Aristotle that not the things themselves, but rather their species are present in the soul. Thus, the latter may be described as “formarum forma”. On the other hand, he held that the intellect knows through ideas, such that the intellect grasps its objects by an immaterial absorption, that is, by becoming them<sup>63</sup>.

Scholastic philosophers (so De Raey observed) had a concise way of explaining things. According to them, the ideas or species in the intellect are natural signs of objects, and they do not originate from opinion or convention. In this sense ideas are like im-

<sup>56</sup> *Clavis philosophiae naturalis*, p. 8.

<sup>57</sup> *Clavis philosophiae naturalis*, p. 13-14.

<sup>58</sup> *Clavis philosophiae naturalis*, p. 31; cf. *De mentis humanae facultatibus*, in *Opuscula philosophica*, p. 302: the senses do not grasp the things as they really are.

<sup>59</sup> *Clavis philosophiae naturalis*, p. 22.

<sup>60</sup> *De cognitione humana*, in *Opuscula philosophica*, pp. 237 and 239.

<sup>61</sup> Also in Gassendi and in other 17th-century philosophers, “vulgar” means just “scholastic”.

<sup>62</sup> *De cognitione humana*, 237. For species as a “vulgar” term, see also *De mentis humanae facultatibus*, p. 300.

<sup>63</sup> *De cognitione humana*, p. 238; cf. pp. 259-60, where species and idea are used as interchangeable terms.

ages, both being signs that play an instrumental role in knowledge<sup>64</sup>. But there are also significant differences between them. Images are embedded in the brain and determined by material qualities; they ground the activity of the imagination<sup>65</sup>. Ideas, by contrast, represent the nature of things, and are the immaterial products of the mind, which has an infinite capacity to always grasp new things. Matter receives the images passively, while the mind knows through ideas and is able to compose and divide them<sup>66</sup>.

Like Descartes, De Raey characterized the idea as “*res cogitata*”, that is, as the thing known insofar as the latter has objective being in the mind. A thing’s objective reality coincides with its being represented by an idea. Indeed, not the idea, but the thing itself is known<sup>67</sup>. Things represented by ideas in the mind have a diminished kind of being. Ideas may represent things that do not exist (anymore); they then lose their objective being<sup>68</sup>.

In another treatise De Raey defended the validity of Aristotelian psychology only as applied to sense perception. The imagination grasps the things through images or species in the brain. This grasp is not a purely mental act, since it depends upon the body. When the mind directs itself to the body, its activity may be characterized as “*phantasmata speculari*”. Pure intellectual thought transcends this level, however: it depends on formal signs, that is, on ideas<sup>69</sup>.

De Raey did not reject the species doctrine. The sensible species can be identified with traces in the brain, which serve the imagination in its grasp of external features of the material world. At the mental level, the species are assimilated to spiritual ideas. Indeed, De Raey’s notion of ideas strongly resembled the traditional notion of intelligible species: both are natural and instrumental signs, generated by an active feature of the mind (“*innata facultas*”).

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<sup>64</sup> *De cognitione humana*, 243-44.

<sup>65</sup> See also *De cognitione humana*, p. 272.

<sup>66</sup> *De cognitione humana*, pp. 239-40; see also pp. 244-45, 272, and 277.

<sup>67</sup> *De cognitione humana*, p. 240-43.

<sup>68</sup> *De cognitione humana*, pp. 251-53.

<sup>69</sup> *De mentis humanae facultatibus*, 297-303.

#### 1.2.4. Arnold Verhel

Arnold Verhel, a professor of philosophy at Franeker, was acquainted with Cartesianism but adhered to Peripatetic philosophy<sup>70</sup>. His *Sylva quaestionum physicarum De anima rationali* concentrated in essence on the nature of the rational soul, its immortality, its relation to the body, as well as on a number of theological issues<sup>71</sup>. None of the 174 questions of this psychological work is devoted to the theory of species: Verhel thought that the need for intelligible species was just self-evident<sup>72</sup>.

It is interesting to note that Descartes was not completely absent from Verhel's reflections on psychology. Thus, Cartesian philosophy of mind and Aristotelian naturalism meet in the following discussion of the seat of the soul.

Dicitur intellectum habere sedem in cerebro, non subjective, sed objective. Quatenus in cerebro formantur phantasmata, objecta intellectus, & cognitionis; ex quibus intellectus agens format speciem intelligibilem; quâ rem repraesentatam intelligit.<sup>73</sup>

This passage represents a terminological and doctrinal synthesis of Cartesian and Peripatetic views. As in Descartes, the soul has its seat in the brain. Yet, it does not inhere in the brain as an accident in a subject, but it inheres there "objectively": the soul depends on the phantasms (which Descartes replaced by brain patterns on the pineal gland) for the contents of knowledge. Where Descartes hypothesized the generation of ideas occasioned by patterns on the pineal gland, Verhel still subscribed to the production of intelligible species through which the represented thing is known.

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<sup>70</sup> See Dibon, *L'enseignement*, 140-46, 163; Galama, *Het wijsgerig onderwijs aan de Hogeschool te Franeker*, 56-60.

<sup>71</sup> Arnoldus Verhel, *Sylva quaestionum physicarum De anima rationali*, Franeker 1662.

<sup>72</sup> See *Sylva quaestionum*, q. 118, p. 231: the human soul is "quodammodo omnia" through intelligible species.

<sup>73</sup> *Sylva quaestionum*, q. 103, p. 201.



### 1.3. *Johannes Clauberg*

The German Johannes Clauberg made the acquaintance of Cartesian philosophy during his studies in the Netherlands<sup>74</sup>. He was a great admirer of Descartes<sup>75</sup> and showed an exceptional interest in his views; yet, like his master De Raey at Leiden, he stuck to Aristotle and to the Peripatetic tradition<sup>76</sup>. There are also distinct traces of Plato and Augustine in his work<sup>77</sup>. His reflections on knowledge acquisition and related issues made an attempt at harmonizing Cartesian dualism with a Peripatetic dependency of perceptual ideas upon external things.

Clauberg endorsed the Cartesian view of the soul as “res cogitans”, rejecting the Aristotelian definition of the soul as “actus corporis”, “forma assistens” or “informans”<sup>78</sup>. With Descartes and De Raey he shared the view that the soul is present in the whole body, but has the pineal gland as its privileged seat where mind and body may interact<sup>79</sup>:

In quam cerebri partem cùm & corpus per suos spiritus, & anima per suam voluntatem agere possit, contingit interdum ut inter se pugnent & confligant.<sup>80</sup>

The union between body and soul is not a substantial one but rather a “conjunctio vitalis”, that is to say, body and soul are connected through operation<sup>81</sup>. Between body and soul Clauberg presumed a “contactus virtutis”, with implicit reference to a doctrine

<sup>74</sup> For biographical information and sources of Clauberg’s philosophy, see W. Weier, *Die Stellung des Johannes Clauberg in der Philosophie*, Mainz 1960, 1-6. On his occasionalism, see R. Specht, *Commercium mentis et corporis*, 108-117.

<sup>75</sup> See *Corporis et animae in homine conjunctio*, in *Opera omnia philosophica*, Amstelodami 1691, 237, where Clauberg called Descartes “Philosophus”, which was the epitheton medieval Scholastics used for Aristotle.

<sup>76</sup> See E. Viola, “Scolastica e cartesianesimo nel pensiero di J. Clauberg”, in *Rivista di filosofia neoscolastica* 67(1975), 247-266; Weier, *Die Stellung des Johannes Clauberg in der Philosophie*, 172; cf. also Verbeek, *Descartes and the Dutch*, 8. Also other later Cartesians, such as Maignan and Du Hamel, attempted to harmonize Aristotelian notions with an overall Cartesian framework; see below § 3.

<sup>77</sup> See Weier, *Die Stellung des Johannes Clauberg in der Philosophie*, 162.

<sup>78</sup> Cf. *Physica contracta*, in *Opera*, 188; *Conjunctio*, 252.

<sup>79</sup> *Physica*, 195; *Conjunctio*, 253-54; see also p. 230, for the intimate connection between soul and body.

<sup>80</sup> *Conjunctio*, 273; for mind-body interaction, see also pp. 217-19.

<sup>81</sup> *Physica*, 205; *Conjunctio*, 216-17.

of Godfrey of Fontaines<sup>82</sup>. The body is the instrument of the soul; the non-causal relation between the two may be compared to that between lord and servant, or between rider and horse<sup>83</sup>.

Interesting from an epistemological point of view is Clauberg's thesis of the "objective" presence of body to soul:

Est quidem animo corpus nostrum etiam objectivè praesens, quoties de eo cogitat (...) Objectiva illa praesentia est inter signum & signatum, imaginem & exemplar, inque sola intentionali & vicaria, imò picta quadam entitate consistit.<sup>84</sup>

The presence of the body to the soul (which in this passage is framed in terms used by the schoolmen to indicate the presence of cognitive objects in the mind) is subsequently explained in Cartesian terms: bodily movements stir the soul to an activity, in the sense that they give the occasion for the soul to develop thoughts. No natural bond or necessity can explain the mutual interaction between mind and body; all we can say about it is that it is grounded in God's will<sup>85</sup>. This is the upshot of Clauberg's occasionalism<sup>86</sup>.

Sense perception is a process involving three stages: (i) the affection of the sense organ and the subsequent transmission of sensory stimuli through the nerves to the brain; (ii) the actual perception of an external object by the soul, insofar as the latter is present in the pineal gland; (iii) the formation of a perceptual judgment<sup>87</sup>. Sensory affections leave traces on the brain, which the "philosophers" called species or phantasms<sup>88</sup>. Perception is an involuntary process, and for that reason it may be called a

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<sup>82</sup> *Conjunctio*, 216. Godfrey of Fontaines postulated a "contactus virtualis" between the agent intellect and the sensory representations; see ch. III, § 3.3.

<sup>83</sup> *Conjunctio*, 216, and 221-22.

<sup>84</sup> *Conjunctio*, 218.

<sup>85</sup> See *Conjunctio*, 218-21; cf. 246, where Clauberg observed that there is no need for a theological justification of this mind-body connection.

<sup>86</sup> For discussion, see Viola, "Scolastica e cartesianesimo nel pensiero di J. Clauberg", 264-65; W. Weier, "Der Okkasionalismus des Johannes Clauberg und sein Verhältnis zu Descartes, Geulincx, Malebranche", in *Studia cartesiana* 2(1981), 43-62.

<sup>87</sup> *Physica*, 196. For a similar distinction, see Descartes, *Meditations*, 436-37, discussed in ch. XI, § 1.1.3.

<sup>88</sup> *Physica*, 202.

“passio”<sup>89</sup>. Clauberg elsewhere replaced this rough picture by a more sophisticated account.

In his *Conjunctio* Clauberg distinguished between two sorts of perception, confused and pure. Confused perception he attributed to the imagination and to the senses; it has its ground in the complex of soul and body. Pure perception he also described as mental or intellectual perception<sup>90</sup>. Sense perception takes place by means of material signs, which merely *indicate* but do not *represent* external objects<sup>91</sup>. Intellectual perception, by contrast, takes place by means of formal signs, that is, by means of mental images:

Puri intellectus perceptio fit per *signa formalia*, quae res verè repraesentant, quatenus earum sunt imagines mente pictae.<sup>92</sup>

The distinction between sense perception and mental perception seems to suggest a return to an Aristotelian type of distinction between perception and cognition. This impression is confirmed by Clauberg where he described the acts of the soul-body complex as “actus transeuntes”, and cognition as an “actus immanens”<sup>93</sup>. This is an Aristotelizing restatement of Descartes’ distinction between sensation (pertaining to the mind-body complex) and imagination or perception as such (a mental event)<sup>94</sup>.

An important point that should be mentioned here is that Clauberg described mental representations as “formal signs”, a definition that was often used for the intelligible species<sup>95</sup>. What is more, Clauberg identified mental representations as images depicted in the mind. Also Descartes sometimes suggested that ideas

<sup>89</sup> See *Physica*, 196; see also *Conjunctio*, 225 and 228.

<sup>90</sup> *Conjunctio*, 242 and 256.

<sup>91</sup> *Conjunctio*: 243: “Sensus sive sensualis perceptio fit per *signa materialia*, quae res quidem indicant, ut hedera suspensa monet vinum esse vendibile; sed eas non repraesentant instar imaginis. Nam ab illa impressione, quam objectum in organo corporeo facit, sensus caloris, soni, odoris & reliqui proximè pendent.” A similar example was used by Thomas Hobbes for *arbitrary* signs; cf. *De corpore*, II.2, in *Opera latina*, vol. I, 13: “Signorum autem alia naturalia sunt quorum exemplum est quod modo dixeramus; alia arbitraria, nimirum quae nostra voluntate adhibentur; qualia sunt, suspensa hedera, ad significandum vinum venale (...).”

<sup>92</sup> *Conjunctio*, 243.

<sup>93</sup> See *Conjunctio*, 217.

<sup>94</sup> See ch. XI, § 1.1.

<sup>95</sup> See, for example, Eustachius of Saint-Paul and John of Saint-Thomas, discussed in ch. X, § 2.2.2 and § 3.2, respectively.

are images, but he eventually rejected that view<sup>96</sup>. In *Conjunctio* Clauberg was not particularly clear about the origin of mental representations. For that we must turn to another work.

In *Exercitationes* Clauberg again described the idea as “*pictura rei in mente*”<sup>97</sup>. Ideas are involved in acts of simple apprehension, and as such they are similar to perception, thought, and concept<sup>98</sup>. Clauberg assigned a twofold mode of being to ideas:

Duplex in omni idea, in omni imagine esse consideramus, quorum unum ab altero variis nominibus distinguimus, jam reale & intentionale, jam materiale & formale, jam formale & objectivum, jam proprium & vicarium opponendo.<sup>99</sup>

As an immanent act or an operation of the mind the idea is a ‘real’ thing, to be classified in the category of action. Its second mode of being is described as “*plus quàm omnino non esse*”, that is, as a diminished kind of being; in this mode the idea represents things in the mind:

Et hoc ipsum *repraesentare* sive exhibere, per modum imaginis, vocamus idearumstrarum esse vicarium, seu objectivum, seu intentionale.<sup>100</sup>

By virtue of the representational force of ideas the soul may “become all things”, as Aristotle had put it. To support his claim that ideas are something ‘real’, Clauberg invoked Augustine’s conception of the soul as “*imago*”, Zabarella’s argument for the existence of intentions, and Piccolomini’s argument for the existence of spiritual beings. Of the latter two Clauberg remarked that they sometimes used obscure phrases to express themselves in, but that they still had valuable things to say on the ontology of ideas and mental images<sup>101</sup>. Still, Clauberg was also well aware of the differences between traditional species and Cartesian ideas. Indeed, one section later he questioned the interpretation of Cartesian ideas

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<sup>96</sup> See ch. XI, § 1.2.1-2.

<sup>97</sup> *Exercitationes*, in *Opera*, 609 and 615.

<sup>98</sup> *Exercitationes*, 613, and *passim*; see also Weier, *Die Stellung des Johannes Clauberg in der Philosophie*, 33.

<sup>99</sup> *Exercitationes*, 617.

<sup>100</sup> *Exercitationes*, 617. For discussion of the notion of objective being, see ch. IV, § 1.5, and, in Descartes, ch. XI, § 1.2.2.

<sup>101</sup> *Exercitationes*, 617-619.

given by a certain Conrad Berg, who had assimilated them to intelligible species in the traditional sense<sup>102</sup>.

Where do perceptual ideas come from? Clauberg endorsed neither a Cartesian innatism of ideas, nor did he claim that ideas come from perception. In this sense his position was similar to that of many medieval opponents of the species doctrine<sup>103</sup>. Clauberg's own solution involved the existence of divine sparks in the soul<sup>104</sup>.

In *Exercitatio* XVII, Clauberg proposed an account of the origin of ideas in terms of their twofold being. The human mind is the spontaneous cause of its own operations, hence also that of ideas with respect to their formal being. This does not hold for ideas in their representational being, however, which require a necessary rather than a spontaneous cause. Clauberg observed that Descartes' words at the beginning of the fifth Meditation, on mind as the cause of its true ideas, are difficult to fathom<sup>105</sup>. He also questioned Descartes' account of our idea of God. Clauberg pointed out that we should first deal with ideas of common objects, before turning to exceptional cases; and mental representations normally depend on external objects as their "exemplar"<sup>106</sup>.

Where Descartes believed that nothing is known without ideas, Clauberg argued that no ideas exist without things<sup>107</sup>. Ideas are basically images, that is, imitations of the things they represent. In this sense, then, Clauberg's position owed as much to Peripatetic psychology as to the Cartesian theory of ideas. Mind autonomously generates its acts, but the latter depend on sensible reality for the content they express.

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<sup>102</sup> *Exercitationes*, 619-622. It is not easy to trace this Conrad Berg. Chr.G. Jöcher, *Allgemeines Gelehrten-Lexicon*, 4 vols., Leipzig 1750-51, mentioned a certain Conrad Berg, who died in 1592, and his son Conrad Berg, who taught theology at Frankfurt and wrote an *Artificium aristotelico-lullio-rameum*, and *Themata theologica*. The latter died in 1642, which makes it improbable that he wrote a treatise on Descartes.

<sup>103</sup> See, for example, Peter Olivi, analyzed in ch. III, § 3.4.

<sup>104</sup> *Exercitationes*, 615. In the Middle Ages, similar positions were held by Eckhart and Heymeric de Campo; for the latter, see ch. V, § 2.3.

<sup>105</sup> *Exercitationes*, 623.

<sup>106</sup> *Exercitationes*, 622-23. Suarez qualified the material object as "causa quasi exemplaris"; cf. *De anima*, IV, c. 2, n° 11, 719, examined in ch. X, § 1.6.

<sup>107</sup> See Weier, *Die Stellung des Johannes Clauberg in der Philosophie*, 21 and 130, on the anti-psychologism of Clauberg.

#### 1.4. Arnold Geulincx

Arnold Geulincx, in his *Metaphysica vera*, used the same framework as Clauberg for discussing the origin of ideas that do not depend on the soul, namely, that of Descartes' philosophy of mind<sup>108</sup>. The body cannot generate ideas because its nature is not proportionate to the task. The mind does not undergo the influence of the body, but rather uses it as an instrument<sup>109</sup>. Bodily motions are relevant for the generation of ideas only insofar as their stirring determines the presence or absence of specific ideas<sup>110</sup>. Conversely, it is inconceivable that a finite mind can act on a body. The correlation between bodily motions and sensations is the work of God, who installs the appearances before the mind. The human mind is a mere observer of this arrangement of things<sup>111</sup>.

In *Metaphysica ad mentem peripateticam*, Geulincx gave a refutation of the traditional theory of species, arguing that it was based on the fundamentally wrong assumption that thoughts are produced by external sensible things. According to Geulincx, this persistent prejudice is implanted in the embryo during its nine month sojourn in the womb, where it forms the belief that the mind is really moved by all things. Yet, philosophical reasoning shows that external things do not emit any species or images, and that they are only the occasion for the mind to generate ideas<sup>112</sup>.

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<sup>108</sup> *Metaphysica vera*, in *Opera philosophica*, ed. J.P.N. Land, vol. II, Hagae Comitum 1892, 149-150.

<sup>109</sup> This is a typically Neoplatonic view that can be found, among others, in Simplicius and his Renaissance followers; cf. ch. VIII, § 1.

<sup>110</sup> *Metaphysica vera*, 151-154.

<sup>111</sup> Cf. *Ethica*, in *Opera*, vol. III, 33: "Sum igitur nudus speculator hujus machinae. In ea nihil ego fingo vel refingo; nec struo quidquam hîc, nec destruo; totum id alterius cujusdam opus est." For discussion, see B. Cooney, "Arnold Geulincx: A Cartesian idealist", in *Journal of the History of Ideas* 16(1978), 167-180, on pp. 174-75.

<sup>112</sup> *Metaphysica ad mentem peripateticam*, in *Opera*, vol. II, 200-207. Notice, that Geulincx (like Descartes) misconceived the (intelligible) species as being transmitted similitudes; cf. ch. XI, § 1.1.2. For Geulincx' occasionalism, see also A. de Lattre, *L'occasionalisme d'Arnold Geulincx. Étude sur les constitutions de la doctrine*, Paris 1967.

### 1.5. Spinoza

Spinoza gave no *psychological* explanation of perception or of empirical knowledge<sup>113</sup>. His analysis of human cognition was set in the context of the relations between the finite modes of the unique substance. The human mind is the idea of the body. Insofar as it is an eternal essence, that is, insofar as it is the idea of the eternal essence of the body, the human mind is part of the infinite intellect of God. To the extent that God constitutes the essence of the mind, the mind perceives or knows whenever God has an idea. The mind's perception of things is only partial or inadequate when God has an idea not only insofar as he constitutes the essence of the mind, but when he simultaneously also has ideas of other things<sup>114</sup>.

Spinoza scorned the intentional species as explanatory principles of human perception and knowledge<sup>115</sup>. Yet, like the Peripatetics, he believed that the human body plays a crucial role in the generation of perceptual ideas. This justifies a brief comparison between the two approaches.

Spinoza agreed with Peripatetic psychology that man's empirical knowledge of the world depends on material bodies stirring the sense organs. This knowledge is confused and inadequate, however, because in the ideas we thus form of the bodies no distinction can be made between the true nature of the bodies and that of the sense organs<sup>116</sup>. Empirical knowledge is principally mediated, in the sense that the mind perceives external things only insofar as

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<sup>113</sup> According to M.D. Wilson, "Objects, ideas, and «minds»: Comments on Spinoza's theory of mind", in *The Philosophy of Baruch Spinoza*, ed. R. Kennington, Washington (D.C.) 1980, 103-120, Spinoza had no satisfactory account of the human mind's consciously representing external bodies.

<sup>114</sup> *Ethica*, II, prop. 11 corol; cf. *Ethica*, V, 29 and 40 corol.

<sup>115</sup> *Epistola* 56, in *Opera*, ed. C. Gebhardt, Heidelberg 1972, vol. IV, 261-62: "non enim mirandum est eos, qui Qualitates occultas, Species intentionales, Formas substantiales, ac mille alias nugas commenti sunt, Spectra, et Lemures excogitasse, et vetulis credidisse."

<sup>116</sup> *Ethica*, II, prop. 16: the idea of any mode in which the human body is affected by external bodies must involve the nature of the human body and at the same time the nature of the external body. For discussion of the neuro-physiological presuppositions of this view, see M. Gueroult, *Spinoza. II. L'âme (Ethique II)*, Hildesheim-N.Y. 1974, 204-207.

they affect our body. All perceptual knowledge is based on the ideas which the mind forms of these affections<sup>117</sup>.

Knowledge of this kind characterizes man as the finite mind of a finite body, involved in an infinite network of things continuously affecting one another. Perceptual knowledge is necessarily partial or inadequate, because the ideas by which we perceive things (that is, the ideas of our own affections) are intrinsically confused. We know that the ideas which we have of external bodies betoken the condition of our own body at least as much as that of external bodies. And it is impossible for us to sift the contribution of our own body from that of external bodies in the generation of perceptual ideas. In other words, our ideas of the affections do not involve an adequate knowledge of their causes.

Spinoza's causal account of perception bears a significant resemblance to the interpretation of Peripatetic psychology by Cyrenaics and Sceptics. While accepting most of Aristotle's account of perception, exponents of these ancient schools had argued that the affections produced in the sense organs by external objects reveal nothing but themselves. In a similar vein, Spinoza thought that all perception is really the perception of affections of one's own body. His doctrine of causality withheld him from sharing the conclusions of these ancient schools, however.

According to Spinoza, our perception of external bodies is based not on ideas representing these bodies, but on ones representing the affections of our own body. Still, the latter make external bodies known to us, for the affections are caused by external bodies, and therefore they also involve the nature of these bodies<sup>118</sup>. Spinoza subscribed to the principle that there is nothing in the effect that was not first in the cause. Hence, the knowledge of an effect involves the knowledge of the cause<sup>119</sup>.

The view that the mind's awareness of its own body precedes the awareness of other bodies marked a clear departure from the

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<sup>117</sup> See *Ethica*, II, props. 22 and 26: "Mens humana nullum corpus externum, ut actu existens, percipit, nisi per ideam affectionum sui corporis." According to D. Radner, "Spinoza's theory of ideas", in *Philosophical Review* 80(1971), 338-59, on p. 340, this approach reveals Spinoza's failure to distinguish between the conditions for having an idea and the object of that idea.

<sup>118</sup> For discussion, see D. Radner, "Spinoza's theory of ideas", 348-49.

<sup>119</sup> See *Ethica*, I, ax. 4.



Aristotelian tradition. According to Wolfson, this view can be traced back to the influence of Telesio and Descartes<sup>120</sup>. Also Campanella should be mentioned here, who defined perception as “perceptio passionis”<sup>121</sup>. It may seem that Spinoza’s explanation of empirical knowledge, like Campanella’s, committed the fallacy of circular reasoning, explaining as it did the perception of bodies in terms of the perception of affections. This is not entirely correct, however. Spinoza argued that the mind’s perceiving *is* its having ideas. Ideas are not inert or picture-like entities perceived by the mind. Rather, they are modes of the attribute of thought, and they are involved exclusively in the causal relations going on in this attribute. Perception of external bodies is based on the fact that the ideas of bodily affections involve ideas of the affections’ external causes. Affections of the body are the effect of necessary causes, which causal reasoning is able to grasp.

Like Descartes, Spinoza distinguished between ideas in a ‘formal’ sense and ideas as involving ‘objective’ reality. Qua formal essence ideas are modes of the attribute of thought; this is their active aspect. Qua representation of bodies our perceptual ideas contain objectively what is formally contained in external bodies, as cause of our bodily affections<sup>122</sup>. As objective reality, that is as representation, the idea is determined by other modes. This is the rationale for the definition of intellectual conceiving as ‘passion’ in the *Short Treatise*<sup>123</sup>. The mind’s passion and activity are only abstractions, however, or “entia rationis”. In Spinoza’s

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<sup>120</sup> H.A. Wolfson, *The Philosophy of Spinoza*, 2 vols., New York 1961<sup>2</sup>, vol. II, 73f. On p. 75, Wolfson quotes a passage from *De rerum natura*, VII.2: “Sense is thus the perception of the action of things and of the impulses of the air, and also the perception of the spirit’s own affections and changes and movements—but especially the latter.” See Telesio, *De rerum natura*, ed. L. De Franco, vol. III, p. 6, ll. 27-29. For Descartes, Wolfson refers to *Principia*, IV.189-190.

<sup>121</sup> See ch. VIII, § 3.5.

<sup>122</sup> For the use of the “formal-objective” terminology, see *Korte Verhandeling*, ed. F. Mignini, in *Korte Geschriften*, eds. F. Akkerman, and others, Amsterdam 1982, II, 20.2; *Ethica*, I, prop. 17 schol., and 30 dem.; II, props. 7 corol. and 8 corol.

<sup>123</sup> *Korte Verhandeling*, II, 15.5, pp. 334-35. For discussion, see F. Mignini, “L’intendere è un puro patire (KV 2/15.5). Passività e attività della conoscenza in Spinoza”, in *La Cultura* 25(1987), 120-151; this article is an enlarged version of “Spinoza’s theory of the active and passive nature of knowledge”, published in *Studia Spinozana* 2(1986).

view, the mind neither undergoes the influence of objects<sup>124</sup>, nor is it free to entertain just any ideas<sup>125</sup>. The relation between mind and body is not causal, for modes of one attribute cannot cause modes of another attribute. Perceptual ideas and bodies are only formally distinct<sup>126</sup>. In perceptual knowledge the mind may be seen as a sort of monitoring device, such that mental processes are just the reflection of physical processes, governed by the laws of the relations between the attributes. The ideas of affections thus generated provide only inadequate knowledge of the material world surrounding us<sup>127</sup>.

Spinoza's metaphysical approach to empirical knowledge circumvented some of the classical puzzles of mind and body that had tantalized Peripatetics and Descartes alike. The mental and the physical are properties of the same underlying reality, the substance, which in itself is neither mental nor physical. Perceptual ideas do not originate from the interaction between mind and sensory representations, nor are they generated on the basis of innate dispositions. Rather, they are modes of thought giving a partial or fragmentary representation of events occurring in the attribute of extension.

## § 2. LATER SEVENTEENTH-CENTURY SCHOLASTIC PSYCHOLOGY

Later Scholastics were hardly at all influenced by non-Scholastic philosophy, and only very rarely they came up with novel views on the issue under consideration here. In this section I first discuss some of the more notable positions of the second half of the seventeenth century. I conclude with a representative survey of the con-

<sup>124</sup> Cf. *Ethica*, II, def. 2.

<sup>125</sup> See *Ethica*, II, prop. 48 schol.; III, prop. 2 schol.

<sup>126</sup> For discussion, see also R.E. Aquila, "The identity of thought and object in Spinoza", in *Journal of the History of Philosophy* 16(1978), 271-288, on p. 282: "Ideas are their objects regarded with respect to the attribute of thought, because an idea is nothing but the state of affairs of some object *being thought*."

<sup>127</sup> Notice that the issue of the isomorphism between functionally described mental states and physiologically described states finds no solution in Spinoza. For discussion, see J.Th. Cook, "Spinoza's science of the «idea of the body»", in *Historical Foundations of Cognitive Science*, ed. J.-C. Smith, Dordrecht 1990, 81-97.

ventional views on species as endorsed by later 'post-Cartesian' schoolmen.

### 2.1. *Libert Froidmont*

The *Philosophia christiana de anima* by Froidmont<sup>128</sup> treats of psychology at large. It is predominantly Peripatetic in outlook, while also mentioning many other classical Greek and Latin authors, such as Homer, Plato, Galen, Apuleius, and Iamblichus. Froidmont showed a keen interest in the physiological and anatomical aspects of psychological phenomena. Moreover, he also examined issues involving moral and theological questions.

Intelligible species, which Froidmont assimilated to ideas, are produced through the agent intellect's illumination of sensory representations and impressed upon the possible intellect<sup>129</sup>. Froidmont briefly touched on the positions of Caietanus and Ferrara with regard to the illumination of phantasms. He rejected Buridan's view of the intelligible species as arising from the material phantasm<sup>130</sup>. Froidmont believed that the agent intellect spiritualizes the phantasms "effectively" and not "formally"<sup>131</sup>. This entails that the bearing ("concursum") of sensory representations on intellectual conceiving is "moral" rather than physical. Species, intentions, and phantasms have a merely instrumental function, namely, to mediate between intellect and physical objects. Froidmont compared the processing of sensory information by the intellect to a blacksmith shooting sparks from the anvil with his hammer while forging the iron<sup>132</sup>.

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<sup>128</sup> Libert Froidmont, 1587—1653; taught philosophy (1614-28) at Louvain, then rhetorics and theology; he rejected Epicuraneism and mechanicism; he promptly reacted to Descartes' *Discours de la Méthode* and was cited by Leibniz, in *Nouveaux essais sur l'entendement humain*, 225; for his relation to Cartesian philosophy, see D. Garber, "Descartes, the Aristotelians, and the revolution that did not happen in 1637", in *Monist* 71(1988), 471-86, on pp. 473-76.

<sup>129</sup> Libertus Fromundus, *Philosophia christiana de anima*, Lovani 1649, 826-27.

<sup>130</sup> Froidmont referred to *In De anima*, III, q. 7; for the equation of intelligible species and phantasm in Buridan, see ch. IV, § 3.2.

<sup>131</sup> *Philosophia christiana*, 828-29.

<sup>132</sup> *Philosophia christiana*, 831-33.

## 2.2. *Thomas Compton Carleton*

The *Philosophia universa* by Compton Carleton<sup>133</sup> contains a traditional exposition of Peripatetic psychology. Compton made a distinction between impressed and expressed species. The former are the principles that stir the mind to engender the latter. The cognitive act consists in a formal similitude or representation. Compton first proved the existence of sensible species<sup>134</sup>, and then turned to the intelligible species.

Against Durandus Compton held out that knowledge requires intelligible species. These are mental accidents, and as such they are ontologically distinct from the objects they represent. They should not be seen as “idola” known prior to the objects. The intellect in its earthly state must rely on the phantasy to cooperate with. Indeed, even of God and the angels we develop involuntary sensible images. Moreover, considering that the separate soul needs species to recall its earthly life, it is only reasonable to suppose that they also exist “in statu coniunctionis”<sup>135</sup>. The species contributes “effectively” to the mental act, in which the intellect produces a formal similitude of the object<sup>136</sup>. The remainder of Compton’s disputation on impressed species was devoted to species of separate objects (God, angels), and to the divisibility and production of (sensible) species.

Like many other late schoolmen, Compton was of the opinion that particulars are known before universals. He also made a distinction between intuitive and abstractive knowledge. Intuitive knowledge is the immediate grasp of an actually existing individual. Through the latter we know “clare & distincte” the quidditative essence<sup>137</sup>. Characteristic of later Scholastic psychology was Compton’s in-depth discussion of the nature of the intellectual act,

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<sup>133</sup> Thomas Compton Carleton, 1591 near Cambridge—1666 Liège; entered the Jesuit order, taught humanities at St. Omer, and philosophy and theology at Liège; for discussion, see Caruso, *Pedro Hurtado de Mendoza e la rinascita del nominalismo nella Scolastica del Seicento*, 93.

<sup>134</sup> *Philosophia universa*, Antverpiae 1649, 519-21.

<sup>135</sup> *Philosophia universa*, 522a-b; for a similar argumentation, see also François de Meyronnes, discussed in ch. IV, § 1.2.

<sup>136</sup> *Philosophia universa*, 523a.

<sup>137</sup> For the expression “clare & distinctum” in other ‘pre-Cartesian’ schoolmen, see ch. X, § 2.1.2-3 and 2.2.2.

whether it is “sola actio physica” (attributed to Coimbra), “qualitas producta” (Oviedo), both “qualitas & actio” (as Suarez seemed to suggest), or “sola actio grammaticalis” (Vasquez, Toletus, Scotus, Durandus, Caietanus, Ferrara, Capreolus, Henry, and Soncinas)<sup>138</sup>. In this context, Compton appealed to a distinction already found in Arriaga and Alonso, namely, that between the “physical” and the “intentional” life of the intellect, and concluded that intellectual conceiving is (physically) “qualitas” and (intentionally) “actio”<sup>139</sup>.

### 2.3. *Franciscus Soares and George de Rhodes*

Soares defended the need for intelligible species by means of the argument from memory. He polemized with Hurtado, like Castelví had done shortly before him, and argued for the cooperation of the agent intellect in the generation of species, observing at this point that it is philosophically unacceptable to appeal to the first cause here<sup>140</sup>. Both phantasm and the agent intellect are given an effective causal role to play. The phantasm is “causa partialis principalis” of the species, and not a mere instrument of the agent intellect. Indeed, the latter does not use the phantasm “ut quo”, and two phantasms may generate one intelligible species<sup>141</sup>. There are intelligible species for each of the Aristotelian categories. The similitude between species and object does not entail that they share the same nature. The species is an “intentional being”, which makes it difficult to describe. It is a “virtual” representation rather than a formal one, and it is best described as a “seed” from which a plant may grow (cognition or formal representation)<sup>142</sup>.

<sup>138</sup> See *Philosophia universa*, 539a-541a.

<sup>139</sup> *Philosophia universa*, 541b-543a. For the views of Arriaga and Alonso, see ch. X, § 3.1 and 3.4, respectively.

<sup>140</sup> *Cursus philosophicus*, Conimbricæ 1651, 374a-376a. Soares mentioned Hurtado’s opinion concerning the redundancy of the agent intellect on p. 374a. For discussion of Soares, see Caruso, *Pedro Hurtado de Mendoza*, 96.

<sup>141</sup> *Cursus philosophicus*, 377a-b

<sup>142</sup> *Cursus philosophicus*, 381a-b. The metaphor of the species as “seed” recurred in many later schoolmen; cf. ch. X, for the positions of Martínez (§ 1.2), Suarez (§ 1.6), Murcia de la Llana (§ 2.1.1), the College of Alcalá (§ 3.3), and Gabriel of Saint-Vincent (§ 3.5.3).

Also George de Rhodes, in a rather conventional defence of the intelligible species<sup>143</sup>, rejected the idea of divine intervention in the production of intelligible species. Rhodes polemized not with Hurtado, however, but with Ficino<sup>144</sup>.

#### 2.4. *Ildephonsus Peñafiel*

Peñafiel invoked the authority of Augustine, Anselm, Damascenus, and Dionysius<sup>145</sup> in his general defence of impressed or intentional species, encompassing sensible as well as intelligible species. He argued that the formal representations present in the soul, and in memory in particular, must have a cause. This cause can only be the "vicaria" or species of external objects, which "virtually" contains the formal representation<sup>146</sup>. Intentional species serve a function in a sort of spiritual biology, such that the species are the seeds ejaculated to fertilize the cognitive power, which may then give birth to knowledge<sup>147</sup>. Species play a crucial role in abstractive knowledge, and sometimes also in intuition<sup>148</sup>.

Like Durandus and Hurtado, Peñafiel believed that the assumption of a distinct agent and unknowing intellect is redundant and even incoherent. Generally speaking, a cognitive faculty accrues to the human soul insofar as the latter is intellectual. Now, insofar as the soul has the power to develop intellectual conceivings, it is

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<sup>143</sup> *Philosophia peripatetica, ad veram Aristotelis mentem*, Lugduni 1671, 511a-b: intelligible species are needed for memory and for the mind's first act.

<sup>144</sup> *Philosophia peripatetica*, 512a.

<sup>145</sup> Ildephonsus De Peñafiel, *Cursus integer philosophicus*, tomus III, Lugduni 1655, 508a-b, referred to *De Trinitate*, XI, c. 2, and to *De Genesi ad litt.*, X, c. 10 and 15, for Augustine; he quoted *Monologion*, c. 33, for Anselm, and *De div. nom.*, c. 7 (angels are full of species) for Dionysius. Peñafiel taught at a Jesuit college in Peru.

<sup>146</sup> *Cursus integer philosophicus*, 509a-10a; cf. 510a: "repraesentatio debet contineri in vicario obiecti, non formaliter, quia vicarium non est formalis repraesentatio obiecti, alias non distingueretur ab ipsa cognitione quae est effectus: ergo virtualiter; sed virtualis repraesentatio obiecti est species impressa."

<sup>147</sup> *Cursus integer philosophicus*, 511a-512b; for the species as "seed", see also p. 589a, and above § 2.3. Peñafiel refers to Augustine, *De Trinitate*, IX, c. 12: "notitia paritur ab obiecto et cognoscente". See also ch. X, § 4.

<sup>148</sup> See *Cursus integer philosophicus*, 647a-49b; an example of intuition through species is the vision of an image in the mirror. Like Gregory of Rimini, Peñafiel held that abstractive knowledge depends on a mediating intuition: for example, through intuition we may know an image that allows us to grasp the represented prototype.

marked by intellectual vitality. Hence, it cannot contain a faculty that is purely productive but that does not know<sup>149</sup>. The (possible) intellect is a first act, and therefore it is able to generate the second act, namely, that of intellection. Moreover, if man had a distinct agent intellect for the production of intelligible species, then God would be the (agent) intellect of the angels<sup>150</sup>.

Peñafiel rejected the agent intellect as producer of intelligible species. Nor did he envisage a cooperation between agent intellect and phantasms as being causally responsible for the species. Generally speaking, intelligible species arise from the intelligible objects. The sensible environment does not contain any actually intelligible objects, however. To solve this problem, Peñafiel once more resorted to a biological metaphor: the development of intelligible species may be compared to that of male sperm, which grows into an embryo and into a substance by virtue of a universal cause (the sun). By analogy, God lets the “semen obiecti” rise to the level of mental representation, namely, as an intelligible species<sup>151</sup>. That the production of human cognition requires divine intervention Peñafiel proved as follows. Intelligible species are produced by the objects they represent. If the objects are unable to perform this operation by themselves, then a partial cause such as the agent intellect is of no avail<sup>152</sup>. Only God can repair the “improportio” of material objects<sup>153</sup>.

The human soul only has a “vis partialis” for producing mental acts, which require the impression of intelligible species by

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<sup>149</sup> *Cursus integer philosophicus*, 585b-86a: “Nulla datur virtus in anima quae sit non vitalis, neque cognoscitiva, & solum detur ab productionem specierum intelligibilium. (...) potentia est actus primus formalis continens in se vim qua possit exercere id quod radicaliter continetur in anima quatenus ei formaliter correspondet illa potentia ut radix illius, sed anima secundum quod est radix illius potentiae est intellectiva; (...) ergo si haec potentia quam vocatis intellectum agentem correspondet animae quatenus vivens intellectualis est, debet esse vitalis intellectualiter.”

<sup>150</sup> *Cursus integer philosophicus*, 588a-b. Scholastic theologians commonly believed that the angels know through innate species provided by God.

<sup>151</sup> *Cursus integer philosophicus*, 589a-590a. For divine intervention in the production of species, see already Hurtado, to whom Peñafiel referred on p. 590b.

<sup>152</sup> See *Cursus integer philosophicus*, 591b-594a, for the classic arguments against the possibility of a cooperation between agent intellect and phantasm. The various proposals for a cooperation between agent intellect and phantasm all beg the question, presupposing as they do what should be demonstrated, namely, the need for an agent intellect.

<sup>153</sup> *Cursus integer philosophicus*, 591a-b; cf. 594a and 595a.

God<sup>154</sup>. For their content the impressed species depend on the phantasms. Hence, we know singulars before we know universals<sup>155</sup>.

Peñafiel formulated a very peculiar type of cognitive psychology. As he saw it, human knowledge depends on sensory information as well as on direct divine intervention. This 'sense-dependent occasionalism', as we may call it, repeated aspects of the positions of Avicenna and Hurtado de Mendoza<sup>156</sup>, and also resembled the position of Clauberg. Later occasionalists such as Malebranche<sup>157</sup> would only partially agree with this view of knowledge acquisition as being based on the sensitive faculties as well and on the direct intervention of God.

## 2.5. *On the isle of the tradition*

The Franciscan friar Lalemandet gave an extensive overview of traditional arguments both for and against the intelligible species<sup>158</sup>, together with their respective solutions<sup>159</sup>. Lalemandet thought it probable to claim that knowledge requires no species. The knowing intellect draws the object into its proper sphere, that is to say, it assimilates them in an "intentional or sympathetic being"<sup>160</sup>. With the rejection of species, the agent intellect goes by the board as well. The presumption of an unknowing intellect is unacceptable. In addition, no reasonable sense can be made of the presumed operation of such an intellect (processing the sensory

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<sup>154</sup> See *Cursus integer philosophicus*, 594a and 668a, where the impression of intelligible species by God is presented as a Thomistic doctrine.

<sup>155</sup> *Cursus integer philosophicus*, 668a-70b; cf. 670b: "(...) phantasmata immediate producunt ex se cum Deo, vel cum intellectu agente species spirituales quae singularia, quorum sunt ipsa phantasmata repraesentent: ergo singularia prius cognoscuntur ab intellectu, cum prius ipsi, quam universalia, per species impressas repraesententur."

<sup>156</sup> See ch. I, § 3.2 and ch. X, § 2.2.4.

<sup>157</sup> See ch. XIII, § 1.1.

<sup>158</sup> Ioannes Lalemandet, *Cursus philosophicus*, ed. novissima, Lugduni 1656, 604a-b: the twelve arguments for the species boil down to the conventional claim that the possible intellect can be actualized only by an internal object, whose presence, in turn, is guaranteed by a mediating representation.

<sup>159</sup> *Cursus philosophicus*, 605b-607b.

<sup>160</sup> *Cursus philosophicus*, 608a.



representations); moreover, the possible intellect as such is perfectly proportionate to its objects<sup>161</sup>.

In his voluminous *Pharus scientiarum*, Sebastian Izquierdo presented a conventional view of the need for impressed (intelligible) species. Thus, he argued that the intellect does not produce its own (cognitive) determinations; moreover, he used the argument from intellectual memory; finally, he pointed out that the separate soul knows by virtue of the species acquired in earthly life<sup>162</sup>. The intelligible species, which he characterized as “semen obiecti”, is produced by the agent intellect and the phantasm. In the production of mental representation the phantasm plays an active role, not as a partial cause, but rather as an instrument of the agent intellect<sup>163</sup>.

Merinerus discussed the issue of intelligible species in a manner that strictly followed the teachings of Scotus. He argued that intelligible species are needed while questioning the possibility of phantasms’ being illuminated by the agent intellect. Merinerus denied that the agent intellect could be able to effectively process sensory representations<sup>164</sup>, and also rejected the theory of objective illumination proposed by Caietanus. He concluded that the so-called illumination of phantasms only makes sense in a metaphorical way; like all “recentiores” he identified the illumination with the production of intelligible species<sup>165</sup>.

<sup>161</sup> *Cursus philosophicus*, 609a-12b.

<sup>162</sup> Sebastian Izquierdo, *Pharus scientiarum*, Lugduni 1659, 3a-5b. For discussion, see E. Caruso, *Pedro Hurtado*, 107; J.L. Fuertes Herreros, “L’influence de la méthodologie cartésienne chez Sebastián Izquierdo (1600-1681). Pour la construction d’une philosophie baroque”, in *Problématique et réception du “Discours de la Méthode”*, ed. H. Méchoulán, Paris 1988, 253-75.

<sup>163</sup> *Pharus scientiarum*, 37b-40b. Izquierdo rejected Caietanus’ view on the illumination of phantasms, cf. 39a-b.

<sup>164</sup> Ioannes Merinerus, *Commentarii in tres libros Aristotelis de anima*, Matriti 1659, 353a-354b: for the first view Merinerus referred to Thomas, *Summa contra Gentiles*, II, c. 77, which he rephrased as follows: “est igitur in anima intellectiva virtus activa in phantasmata, faciens ea intelligibilia.” This text was of crucial importance in the doctrine of radical illumination espoused by Sylvester of Ferrara; see ch. VII, § 2.2.

<sup>165</sup> *Commentarii in tres libros Aristotelis de anima*, 354a-355b. The production of intelligible species as the main operation of the agent intellect was a central tenet of Suarez’s cognitive psychology; see ch. X, § 1.6. According to Rubio, the illumination of the phantasms is a “metaphorica locutio” for the production of intelligible species; cf. ch. X, § 2.1.3.

Antonius Bernardus de Quiros polemized with some of the recent Thomists who believed that the impressed species is “eiusdem rationis” with the object. De Quiros pointed out that this holds only for the intuitive species<sup>166</sup>. He described the species as a “qualitas quaedam ab objecto in potentiam missa”, arguing that it serves as the basis of cognition, which consists in the assimilation of the object “in esse intentionali”<sup>167</sup>.

Antoine Goudin<sup>168</sup> explicitly appealed to the authority of Aquinas in his argument that spiritual species are generated from illuminated and hence intelligible phantasms<sup>169</sup>. The illumination by the agent intellect may be compared to light flashing from the eyes of cats, making objects visible in the darkness<sup>170</sup>.

Other thoroughly conventional analyses were given by Alexander Piny<sup>171</sup>, and around the turn of the seventeenth and eighteenth century by Franciscus Peynado<sup>172</sup> and Sebastian Dupasquier<sup>173</sup>.

### § 3. LATER CARTESIAN INTERPRETATIONS OF THE SPECIES DOCTRINE

By and large, Scholastic philosophy in the seventeenth century had little eye for the psychological problems raised by the scientific

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<sup>166</sup> Antonius Bernardus de Quiros, *Opus philosophicus seu Selectae disputationes philosophicae*, Lugduni 1666, 602b. For discussion, see Caruso, *Pedro Hurtado de Mendoza*, 86-87. Like many other contemporary authors, De Quiros, in his argument for impressed species, made no sharp distinction between sensible and intelligible species.

<sup>167</sup> *Opus philosophicus*, 604a-614a.

<sup>168</sup> Antoine Goudin, 1639—1695; entered the Dominican order in 1657; taught at Limoges and Avignon; published his *Philosophia juxta inconcussa tutissimaque divi Thomae dogmata* in Lyon 1671; many reprints followed, the last being published in Orvieto (1859).

<sup>169</sup> This actualizing of the potential intelligible contained in the phantasm, prior to the generation of the intelligible species, reminds of the positions of Caietan and Zabarella; see ch. VII, § 2.1 and ch. IX, § 1.1, respectively.

<sup>170</sup> Antonius Goudin, *Philosophia juxta inconcussa tutissimaque divi Thomae dogmata*, Parisiis 1679, tomus III, 585-86.

<sup>171</sup> *Cursus philosophicus*, tomus V, Lugduni 1670, 270-276 and 286f.

<sup>172</sup> *Disputationes in tres libros Aristotelis De anima*, Compluti 1698, 149a-b, 241a-46b.

<sup>173</sup> *Summa philosophiae scholasticae, et scotisticae in quatuor partes scripta*, Patavi 1705, tomus IV, 343-350, and 558-565.

discoveries of that time. Still, modern philosophy interacted with Scholasticism in a variety of ways. Most philosophers of the early seventeenth century had received a Scholastic education, and had by consequence adopted many of the traditional concepts and terminology. In the Netherlands, authors such as De Raey and Clauberg undertook a sort of synthesis of Aristotelian and Cartesian philosophy. As pointed out in an earlier chapter, many of the Scholastic manuals tried to fill in the gaps left by Aristotelian writings<sup>174</sup>. Moreover, in the course of time, when criticism of the Peripatetic philosophy grew sharper, some of the manuals began to incorporate non-Aristotelian notions and doctrines. One such case has recently been studied by Blum, namely, the course on Aristotelian philosophy by Melchior Cornaeus<sup>175</sup>. Cornaeus sought to incorporate elements from experimental physics and applied mathematics in Peripatetic philosophy. As Blum put it, he ‘aristotelized’ modern physics and ‘experimentalized’ the *Cursus philosophicus*<sup>176</sup>.

It is remarkable that not all later Cartesians rejected the Scholastic doctrine of species with the same fervour or in the same manner. Antoine Le Grand, in his authoritative Cartesian philosophical textbook, did not accept the species<sup>177</sup>. Jean le Clerc gave a more detailed rejection of the species<sup>178</sup>. Other Cartesians were

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<sup>174</sup> This is evident in the textbooks on natural philosophy, where technical astronomy, optics, and botany (among others things) were added to the traditional subjects. See ch. X, § 2, introduction.

<sup>175</sup> *Curriculum philosophiae Peripateticae*, Würzburg 1657.

<sup>176</sup> Cf. P.R. Blum, “Sentiendum cum paucis, loquendum cum multis: Die aristotelische Schulphilosophie und die Versuchungen der Naturwissenschaften bei Melchior Cornaeus SJ”, in *Aristoteles. Werk und Wirkung*, ed. J. Wiesner, 2 vols., Berlin-N.Y. 1985-1987, vol. II, 538-59, on pp. 548 and 559.

<sup>177</sup> Antonius Le Grand, *Institutio philosophiae, secundum principia Renati Descartes: Nova methodo adornata, & explicata*, editio secunda, Norimbergae 1683, “Introductio”, p. 14: intentional species are “ineptae et chimaericae”; see pp. 621-622 for his adoption of Descartes’ threefold scheme of sense perception and his rejection of species; on p. 696, he asserted that the motions in the sense organs merely occasion the generation of ideas. Le Grand endorsed Arnauld’s interpretation of the Cartesian view of ideas; cf. also J.W. Yolton, *Perceptual Acquaintance from Descartes to Reid*, Oxford 1984, 107. Also the Cartesian physicist Jacques Rohault (1620—1672) attacked the doctrine of sensible species; cf. R.A. Watson, *The Breakdown of Cartesian Metaphysics*, Atlantic Highlands (NJ) 1987, 87f.

<sup>178</sup> See *Pneumatologia seu de spiritu*, in Jean le Clerc, *Logica, ontologia, pneumatologia*, Amstelodami 1692, 73-195, on p. 102. With regard to the nature

less radical in their rejection of Peripatetic psychology. De la Forge and Desgabets, for example, rephrased the doctrine of (sensible) species in terms of Cartesian philosophy<sup>179</sup>. A similar attitude was taken by Du Hamel, a Scholastic author with a tendency to harmonize Cartesian and Aristotelian doctrines. Intelligible species were sometimes rejected (De la Forge), and sometimes assimilated to ideas or notions (Du Hamel). Among the second group of later Cartesians I reckon Maignan, author of a remarkably un-Aristotelian Scholastic manual.

### 3.1. *Emanuel Maignan*

By the 1650's criticism of Peripatetic philosophy had grown much sharper, and some of the philosophical manuals became distinctly un-Aristotelian or even anti-Aristotelian in their tone and outlook. This was particularly true of the sections on natural philosophy. The rise of the new science had released a surge of new discoveries, which often clashed with central tenets of Aristotelian physics. A typical example of the rising class of un-Aristotelian courses in philosophy is that of Emanuel Maignan<sup>180</sup>.

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of ideas Jean le Clerc distinguished four different hypotheses, the first being the doctrine of species. Many schoolmen thought that the objects emitted a sort of "simulacra", which impress themselves on the external and internal senses. Then the agent intellect spiritualizes them and presents them to the possible intellect. He rejected this theory on the basis of three arguments: (1) the intellect is merely "patiens"; (2) how can the agent intellect capture a thing which the possible intellect does not grasp (yet); (3) the emanation of the species should involve an "immutatio corporum". The other three hypotheses are occasionalism, the identification of idea and perception, and the presence of the ideas in God. In this context, Le Clerc explicitly declined to endorse either one of these alternatives; cf. *Pneumatologia*, 103-105. In his logic, Clerc emphasized that perceptual knowledge is the product of an unconscious and involuntary process; cf. *Logica sive ars ratiocinandi*, Amstelodami 1692, 88: "Sentiendi facultas est quâ ex occasione quorundam motuum corporis, dolorem, voluptatem, aut quamvis aliam cogitationem volentes nolentes in nobis nasci sentimus." Earlier in the *Pneumatologia*, he characterized the ideas as the immediate object of the mind; they are either innate or arise from the senses, through abstraction and/or meditation; see *Pneumatologia*, 79, and cf. *Logica*, 7.

<sup>179</sup> For an unproblematic assimilation of the central tenets of Peripatetic psychology by contemporary French authors, such as Pierre Chanet, *Traité de l'esprit de l'homme et de ses fonctions*, Paris 1649, and Marin Cureau de la Chambre, *Le système de l'ame*, Paris 1665, see Yolton, *Perceptual Acquaintance*, 59-61.

<sup>180</sup> Emanuel Maignan, 1601-1676; taught at the convent of the Minims Trinità dei Monti (Rome), 1636-50; since 1650 Provincial of the Order in

Maignan's *Cursus philosophicus* endorsed the Cartesian outlook in philosophical psychology. Vision is basically reduced to touch: the physiological processes underlying perception are purely mechanical, and may be compared to a pneumatical organ<sup>181</sup>. Perception is occasioned by motions stirring the brain, and in particular the "sedes animae" (the pineal gland). Provided that these motions are not seen as images that resemble their causes, they may be identified with the intentional species of traditional psychology:

Porro his motibus, eorumque dicta propagatione ad cerebrum fit id omne quod communiter dicitur fieri specierum intentionalium ab externo sensu ad internum emissione, & irradiatione: quae nomina rem quidem explicant; sed metaphorice: neque enim, physice, & proprie loquendo, sunt hic imagines ullae, vel picturae, aut sigillationes, per similitudinem aliquam ratione figurae vel substantiae: sed solum sunt expressiones motuum; id est sunt motus cerebro communicati, similes eis qui ab extrinseco suscepti sunt; & hac similitudine in cerebro exprimuntur motus qui ab externo sensibili imprimuntur.<sup>182</sup>

The Scholastic species thus becomes a "motus communicatus"<sup>183</sup>, that is, it is identified with the ensemble of motions induced by material things in the sense organs, nerves and animal spirits involved in the Cartesian mechanism of perception. Also the rational soul, which depends on the organical imagination, conceives through species. The mental act is best characterized as an intentional motion:

& facile concipio intellectionem nihil esse aliud quam actionem intellectus expressivam actionis obiecti in ipsum intellectum, id est

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Toulouse; author of an influential *Perspectiva horaria* and many publications on natural science. For discussion, see B. Jansen, "Die scholastische Psychologie vom 16. bis 18. Jahrhundert", 358; J.S. Spinks, *French Free-Thought from Gassendi to Voltaire*, London 1960, ch. V; P.J.S. Whitmore, *The Order of Minims in Seventeenth-Century France*, The Hague 1967, ch. VI; Ch.B. Schmitt, "Towards a reassessment of Renaissance Aristotelianism", in *History of Science* 11(1973), 159-193, on pp. 160-61; idem, "The rise of the philosophical textbook", 793 and 803.

<sup>181</sup> See *Cursus philosophicus*, Lugduni 1673 (first edition Toulouse 1653), 536-40, 547, where Maignan referred to *Dioptrique*, chap. 5-6.

<sup>182</sup> *Cursus philosophicus*, 532.

<sup>183</sup> *Cursus philosophicus*, 535.

conformem speciei ab obiecto susceptae; species enim, imago et character obiecti, est actio eius ut dicebam.<sup>184</sup>

Intellectual conceiving consists in an intentional movement of the soul, which depends on the presence of motions ("species") in the organ of the imagination. Therefore, it is an active as well as a passive process. The physical motions in the brain have no direct causal impact on the soul, but they nonetheless determine the soul's knowledge. This view of knowledge acquisition put the intricacies of the Peripatetic theory of abstraction in the shade:

& è contra quàm sit intricatus atque inimaginabilis ille quo solent Peripatetici communiter dicere primo intellectum passibilem extra-here ab illo phantasmate corporeo ac nimis crasso & materiali, subtilem quandam & immaterialem speciem intelligibilem eiusdem obiecti impressam tantum; quod dicunt *subtilizare* atque *spiritualizare* ipsum phantasma: secundo intellectum agentem informatum specie illa intelligibili producere speciem expressam quae sit ipsa intellectio.<sup>185</sup>

Notice that Maignan presented here a rather garbled version of the traditional species doctrine, such that abstraction would be performed by the possible intellect, while the sole task of the agent intellect, being informed by the species (*sic*), would be to produce the expressed species or intellectual act<sup>186</sup>. Maignan called this view "vanum", unreasonable, false, absurd, and even repulsive. First, how can phantams be spiritualized if they do not contain anything spiritual? Moreover, if the possible intellect is required to mediate between the agent intellect and the phantasm, then we find that it is either spiritual or corporeal, such that it is causally inert with respect to one of the two. Thirdly, why should the production of the intelligible species be direct and that of the ex-

<sup>184</sup> *Cursus philosophicus*, 566.

<sup>185</sup> *Cursus philosophicus*, 568. Notice that the term "spiritualizare" was already used by John Ponce with respect to the operation of the agent intellect regarding the corporeal object. However, Ponce emphasized that this 'spiritualization' consists merely in the production of a mental representation; cf. ch. X, § 3.5.1 and *Integer Philosophiae cursus*, 476a: "Solum hic advertendum, quod quando dicitur intellectus agens spiritualizare obiectum corporeum relucens in phantasmate, per illud nihil aliud intelligi debet quam quod producat speciem qua repraesentari possit illud obiectum spiritualiter, per cognitionem scilicet intellectivam, quae spiritualis est."

<sup>186</sup> For the abstraction as performed by the possible intellect, see, among others, Lefèvre d'Étaples, Zabarella, and Suarez, examined in ch. VI, § 1.4, ch. IX, § 1.1, and ch. X, § 1.6, respectively.

pressed species mediated? Finally, insofar as it is distinct from the intellect, the species cannot be generated within the intellect<sup>187</sup>. In sum, the only acceptable interpretation of the species is the one mentioned above, namely as “actio obiecti connaturalis, qua se facit sentiri a sensu”<sup>188</sup>.

Maignan accepted sensible species as physical motions stirring the brain and occasioning perception. The species as “motus communicatus” has a function in the mind’s intentional interaction with physical reality. Maignan rejected intelligible abstracted species, however; his Cartesian psychology had no room for the type of interaction between mind and perceptual representation as postulated by Peripatetics.

### 3.2. *Louis de la Forge*

In his treatise on the human mind<sup>189</sup>, Louis de la Forge defended the Cartesian orthodoxy in psychology against Gassendi and Regius<sup>190</sup>. One of the work’s central themes is the refutation of traditional species and their re-interpretation in Cartesian terms.

Referring back to Descartes’ *Dioptric*, De la Forge submitted that the view of knowledge as consisting in a reception of species leads to absurd consequences. Thus, the air through which species are transported would have knowledge, as would the mirrors that reflect them. Moreover, a dead cow with eyes opened would still be receiving species, and hence it would see<sup>191</sup>. De la Forge took issue not only with Chanet’s view of knowledge<sup>192</sup>, but also with

<sup>187</sup> See *Cursus philosophicus*, 568-69.

<sup>188</sup> *Cursus philosophicus*, 576.

<sup>189</sup> See Ludovicus de la Forge, *Tractatus de mente humana, ejus facultatibus & functionibus, Nec non de ejusdem unione cum corpore; Secundum principia Renati Descartes*, Amstelodami 1669. For a biographical sketch of Louis de la Forge (1632—1666/7), see J. Isolle, “Un disciple de Descartes: Louis de la Forge”, in *XVIIe siècle* 92(1971), 99-131. For general discussion, see R.A. Watson, “Cartesianism compounded: Louis de la Forge”, in *Cartesian Studies* 2(1981), 165-171; idem, *The Breakdown of Cartesian Metaphysics*, Atlantic Highlands (NJ) 1987, pp. 85-86.

<sup>190</sup> See *Tractatus de mente*, 1-11. De la Forge would be mentioned by John Sergeant, *Solid Philosophy asserted against the Ideists*, London 1697, p. 110; for Sergeant, see ch. XIII, § 2.3.2.

<sup>191</sup> *Tractatus de mente*, 47.

<sup>192</sup> *Tractatus de mente*, 46. For Chanet, see Yolton, *Perceptual Acquaintance*, 60-61.

that of Fracastoro. According to De la Forge, Fracastoro believed that the human mind contemplates species, that is, little images transmitted by the external bodies to the sense organs and to the senses. On this view, which he qualified as “crassus mehercule error, sed communis”, the mind would be a sort of angel dwelling inside the brain, where it would be contemplating the species, which, by consequence, are confused with ideas<sup>193</sup>. De la Forge did not reject species as such, but only the conception that they are similitudes of external objects grounding human thought.

Species are the result of local motions impinging on the senses<sup>194</sup>:

Omnes species sensuum, imaginationis, & memoriae nihil aliud sunt, quam vestigia motus localis, ab objecto externo sensibus nostris impressa, (...) aut ad minimum secundum sententiam scholae sunt accidentia corporea, inter quae, & nostras cogitationes, nostramque cognitionem nulla concipi potest intercedere analogia.<sup>195</sup>

Some authors confuse body and soul when they erroneously assign knowledge to both. Some perceptions admittedly depend on the body, too, but they all depend on the mind<sup>196</sup>. Knowledge is the mental perception of what is “intime” represented to the mind. The reception of species touches only the body, not the mind; the mind develops its activity merely on the occasion of impressions on the sense organs<sup>197</sup>.

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<sup>193</sup> *Tractatus de mente*, 51 and 56; for discussion of Fracastoro, see ch. VI, § 1.5. De la Forge remarked that Descartes contributed to the confusion between species and idea, when he spoke of the contemplation of ideas in the pineal gland; cf. pp. 50, 58 and 139. See also ch. XI, § 1.1.2.

<sup>194</sup> A likely motive for De la Forge's polemics with Fracastoro was the latter's interpretation of motion and change, affecting the intellect, in terms of species and forms. See *Turrius sive de intellectione dialogus*, in *Opera omnia*, Venetiis 1574 (2nd ed.), 121r-148v, p. 23r-v: “Praeterea motus omnis & alteratio nihil aliud est quam forma, quae recipitur, quatenus aliquid actu fit, quod in potentia erat. In intellectione autem non recipitur aliud, quam species repraesentans, per quam actu fit anima. Impossibile igitur est alterationem hanc à specie separari.”

<sup>195</sup> *Tractatus de mente*, 48.

<sup>196</sup> See also *Tractatus de mente*, 194: there are two types of “cogitationes”, some depend on the union between mind and body, others only on the will.

<sup>197</sup> *Tractatus de mente*, 49-50. See also p. 62, where De la Forge endorsed Descartes' dispositional innatism as developed in *Notae in programma*; on p. 72, he defended this position against Regius. On pp. 133-37, De la Forge endorsed Descartes' distinction between three moments in sense perception: impression of objects on nerves, a series of motions stirring the pineal gland, and the (perceptual) judgment. See also ch. XI, § 1.1.3.



On the traditional view, the species were erroneously seen as faithful representations of objects, and the cause of ideas that resemble the objects. Many objects and thoughts have nothing in common with the material species, however, such as those about God and the soul. Species are embedded in the physiological structure of the senses, which is why they are of necessity only about particular material things. They bear no iconic resemblance to their causes; and even when they do resemble their objects, it is not this resemblance that determines their role in cognition<sup>198</sup>. If species would be similar to the objects that cause them, then there would be no place for error in sensory experience. Moreover, the pain that is felt when cutting one's finger with a knife does not correspond to a property in the knife<sup>199</sup>. Corporeal species are just mutations induced by the objects in the nervous system, drawing the mind toward specific external objects:

Dicam igitur species corporeas nihil esse aliud, quam mutationem, quam objecta (aliaeque causae, quae mentem humanam obligant ad aliquam cogitationem habendum, quam alias non haberet) adferunt motui & formae cursus spirituum, qui ex glandula pineali exeunt, agendo in fibras nervorum, atque ea ratione aliquanto magis aperiendo eos poros ventriculorum cerebri, unde originem trahunt, quam vicinos.<sup>200</sup>

Species are re-interpreted in terms of Descartes' dualism of mind and body as developed in the *Dioptric* and *Meditations*. They are just motions in the realm of bodily reality, and by virtue of the mediating role of the pineal gland they occasion mental activity. The Aristotelian "phantasmata speculari" may similarly be re-interpreted in reasonable terms, provided that the phantasms are seen as the species of objects in the senses or in the imagination, and not as the forms of our thoughts<sup>201</sup>.

The corporeal species that stir the pineal gland may be caused in either of four ways, namely, by sensory activity, by memory traces, by activity of the animal spirits, or by a "vis animae" (that

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<sup>198</sup> *Tractatus de mente*, 52-3, cf. 56; see also p. 60: ideas have nothing in common with the objects they express. See Descartes, *Dioptrique*, 112-13 and 131.

<sup>199</sup> *Tractatus de mente*, 55-6. This argument was already used by Descartes.

<sup>200</sup> *Tractatus de mente*, 57.

<sup>201</sup> *Tractatus de mente*, 63.

is, the will)<sup>202</sup>. The imagination (characterized as a “*facultas mixta*” between sense and intellect) has a crucial role in acts of recollection, as it is able to reproduce the species of absent objects<sup>203</sup>. Perceptual errors are due to an intricate mingling of mental and bodily capacities. The mind depends for its perceptual ideas on mediation by the nervous system and the pineal gland, and it is not always possible to tell with certainty whether the species that trigger an idea originate from the senses, from memory, from the animal spirits, or from the will<sup>204</sup>.

Our ideas of the corporeal world depend in part on the imagination. If we think about a body, the imagination produces a species of this object in the pineal gland. This species constitutes a confused representation, and it is instrumental in the production of a general notion of the body’s nature<sup>205</sup>. This construction is remarkably close to the views of species formulated by Renaissance Neoplatonics, such as Marcantonio Genua and Teofilo Zimara, and by Suarez<sup>206</sup>: the origin of perceptual ideas lies in the union between mind and body in the pineal gland, but they are produced by an intrinsic mental faculty<sup>207</sup>.

### 3.3. *Desgabets and Du Hamel*

Like Descartes, Desgabets distinguished between pure intellection and imagination. In pure intellection the mind is drawn to spiritual ideas, in the imagination it is drawn to corporeal species<sup>208</sup>. Like Maignan and De la Forge, Robert Desgabets in his treatise *De l’union de l’ame et du corps* identified corporeal species with the traces left in the brain by the animal spirits:

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<sup>202</sup> *Tractatus de mente*, 139; cf. also p. 194.

<sup>203</sup> *Tractatus de mente*, 141-148. However, there is also an intellectual memory for things of which there are no traces on the pineal gland; cf. p. 172. See also p. 173: in the imagination the mind “applies” itself to the body.

<sup>204</sup> *Tractatus de mente*, 157-58.

<sup>205</sup> *Tractatus de mente*, 67.

<sup>206</sup> See ch. VIII, § 1.2 and 4; and ch. X, § 1.6.

<sup>207</sup> *Tractatus de mente*, 68-72. On p. 174, De la Forge described the idea, insofar as being “*primitiva & innata*”, as “*facultas producendi*”.

<sup>208</sup> Robert Desgabets, *De l’union de l’ame et du corps*, in *Oeuvres philosophiques inédites*. Introduction par G. Rodis-Lewis. Texte établi et annoté par J. Beaudé, Paris 1983, p. 297-98.

(...) l'agir de l'âme est toujours accompagné de quelque dépendance du corps, en ce que les espèces corporelles, qui consistent dans les traces que le cours des esprits animaux ont formées dans la substance du cerveau, et les idées spirituelles de l'âme ont entre elles une liaison fort étroite.<sup>209</sup>

The species "excite" the generation of ideas, and they accompany all perceptual knowledge<sup>210</sup>. In another passage Desgabets stressed the fact that the soul depends on species for its knowledge of material as well as spiritual things. Indeed, all ideas depend on the body<sup>211</sup>.

Also Jean du Hamel stressed the sensory origin of all knowledge. It is remarkable that he explicitly rejected the Scholastic doctrine of sensible species, while continuing to use the term "species" at the mental level as an equivalent of idea and notion.

In the section "De corpore animato", Du Hamel assimilated the Scholastic sensible species to the effluences of Democritean and Epicurean philosophy<sup>212</sup>. He rejected the species because they failed to fit the basic principle of Cartesian physics that corporeal action is nothing but motion. Corporeal objects move the sense organs; the motions eventually reach the brain, where the mind "applies" itself to the germane brain patterns<sup>213</sup>. Unlike physical motions, sensible species are vague and problematic in ontological status ("tenuissimae entitatis") and in nature ("qualitates abstrusae & inexplicabiles"). Moreover, no reasonable account of how they are transported can be given<sup>214</sup>.

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<sup>209</sup> *De l'union de l'âme et du corps*, 294.

<sup>210</sup> *De l'union de l'âme et du corps*, 294.

<sup>211</sup> In *De l'union de l'âme et du corps*, 298-99, Desgabets gave the following arguments for this claim: (1) the composition of man; (2) the soul cannot detach itself from the influence of the body, as we may notice in sleep; (3) health and sickness correspond at the bodily and at the mental level; (4) a blind man has no ideas of colours; (5) the intellect is passive; (6) without (bodily) memory no thought is possible; (7) all ideas are related to motions in the organs; (8) without the body, the human mind would be angelic; (9) organic motions occasion and preserve ideas; (10) God has decreed the empirical knowledge of the human soul.

<sup>212</sup> Cf. already Descartes (ch. XI, § 1.1.2); cf. also Malebranche's rejection of the sensible species (discussed in ch. XIII, § 1.1.2).

<sup>213</sup> Johannes Baptista du Hamel, *Opera philosophica*, 2 vols., Norimbergae 1681, tomos I, see 491-96, and see also p. 272: in the imagination the mind applies itself to the phantasms or brain traces.

<sup>214</sup> *Opera philosophica*, tomos I, 488-496.

Like most philosophers inspired by Descartes, Jean du Hamel rejected the view, attributed by him to the Scholastics, that the phantasms can move the mind<sup>215</sup>. He explicitly agreed with one of Descartes' main opponents, namely Gassendi (whose notion of species he rejected, though, as we have seen above), about the sensible origin of human knowledge<sup>216</sup>. However, the senses merely offer the occasion for the mind to exercise its capacities<sup>217</sup>. Moreover, the mind's spiritual ideas do not resemble the phantasms<sup>218</sup>. Du Hamel accordingly rejected the distinction between agent and possible intellect<sup>219</sup>.

Du Hamel subscribed to the principle of Scholastic psychology that objects must be presented to the intellect for them to be known<sup>220</sup>. This may explain why he continued to use species as equivalent to ideas or notions:

Cognitio, perceptio, intellectio, cogitatio, & alia si quae sint vocabula, quae actum mentis proprium designant, promiscuè usurpari solent: ut id ipsum per quod aliud intelligimus, percipimus, vel cogitamus, ideam, imaginem, speciem, notionem appellamus. (...) Quod verò format, & certâ velut figurâ cogitationem nostram induit ac determinat, hoc ideam vel speciem vocitamus.<sup>221</sup>

Scholastics had been mystified by the question whether species and object share the same nature. The view that species represent "virtualiter" or "effective" is plainly incomprehensible. Ideas or species are not images in any iconic sense of the word; they just *express* the nature of the cognitive object<sup>222</sup>. Ideas or notions are products of the mind, in which they inhere as accidents. To describe the role of the represented object, Du Hamel borrowed a view from Suarez: the material object that is represented serves as an exemplary cause.

Quare in ipsâ ideâ, aut notione rei, quam mens effingit, duo sunt imprimis observanda: primum, quòd sit modus quidam, seu accidens, quod menti inhaeret, & ab eâ profluit; alterum, quòd rem aliquam

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<sup>215</sup> *Opera philosophica*, tomus I, 419.

<sup>216</sup> *Opera philosophica*, tomus I, 271.

<sup>217</sup> *Opera philosophica*, tomus I, 260.

<sup>218</sup> *Opera philosophica*, tomus I, 271.

<sup>219</sup> *Opera philosophica*, tomus I, 417.

<sup>220</sup> *Opera philosophica*, tomus I, 269.

<sup>221</sup> *Opera philosophica*, tomus I, 252-53.

<sup>222</sup> Cf. *Opera philosophica*, tomus I, 254-55, and 269-70.

repraesentat, aut exhibeat: illud à mente, ut ab effectrice, hoc ab ipsa re concepta, ut ab exemplari causâ mutuatur.<sup>223</sup>

The positions of Desgabets and Du Hamel illustrate the extent to which the modern view of ideas was rooted in the traditional notion of species. In conformity with traditional Peripatetic psychology, both Desgabets and Du Hamel stressed the sense-dependency of intellectual knowledge. They took divergent views of the species, however. Desgabets accepted only a re-interpreted version of sensible species, like some of his earlier colleagues examined in this section. Du Hamel rephrased the original Cartesian position, claiming that all sense-perception is based on motion and not on corpuscular entities. Hence, he thought that the term 'species' is badly misleading in the context of perception, although it may still be used at the mental level as an equivalent for idea and notion.

#### § 4. SPECIES IN SEVENTEENTH-CENTURY PHILOSOPHICAL LEXICA<sup>224</sup>

##### 4.1. *Rudolphus Goclenius*

In the general philosophical lexicon<sup>225</sup> by Goclenius, eight distinct meanings of "species" or *eidos* are listed. Two of these are particularly interesting for present purposes, namely, the third (mental image) and the seventh (pseudo-Platonic)<sup>226</sup>. Goclenius then turned to give another type of distinction, namely, that between "species realis" and "species in mente quae representat".

<sup>223</sup> *Opera philosophica*, tomus I, 253. Suarez regarded the phantasm as exemplary cause; see ch. X, § 1.6, and *De anima*, IV, c. 2, n° 11, 719.

<sup>224</sup> For a bibliography on the 17th-century philosophical lexica, see E. Canone, "Phantasia/imaginatio come problema terminologico nella lessicografia filosofica tra sei-settecento", in *Phantasia-Imaginatio. V Colloquio Internazionale del Lessico Intellettuale Europeo*, eds. M. Fattori & M. Bianchi, Roma 1988, 221-257, on p. 224, note 9. Notice that N. Buchardus, *Repertorium philosophicum*, Gerae 1614<sup>3</sup> and Francesco Piccolomini, *De rerum definitionibus*, Venetiis 1600, do not examine the species.

<sup>225</sup> Rudolphus Goclenius, *Lexicon philosophicum quo tamquam clave philosophiae fores aperiuntur*, Francofurti 1613.

<sup>226</sup> *Lexicon philosophicum*, 1068: (1) "forma externa rei"; (2) "pulchritudo"; (3) "imag[o] vel mente concepta (...) vel picta sculptave"; (4) "forma interna rei"; (5) "rei essentia physica"; (6) individual essence; (7) "idea pseudo platonica"; (8) "notio logica".

In this context he also distinguished between “species” as natural image (*physikon*), “effigies” as artificial image (*technikon*), and “forma”, observing that this distinction was not drawn by the Greeks<sup>227</sup>.

Goclenius described the intelligible species as “*imago rei intelligendae (ut obiecti)*”, which as “*principium, seu ratio intelligendi*” concurs with the intellect in generating the mental act, and which inheres in the intellect as accident. The intelligible (impressed) species<sup>228</sup> is distinguished from the expressed species (“*conceptus formalis*” or “*verbum mentis*”, which as “*qualitas*” is the result of the intellection, subsumed under the category of “*actio*”)<sup>229</sup>.

The distinction between species and concept is not always clear in Goclenius, who used the term “conceptus” both for impressed species (sensible and intelligible) and for expressed species (“*phantasmata*” or “*phantasiae*”)<sup>230</sup>. Discussing the expression “species”, he defined “conceptus” as “*vitalis quaedam imago rei intellectae*”. Eventually, the primary meaning of species is identified as “*notio*”. Goclenius took species to stand for the things whose form they are, and in this sense they may be identified with the essential idea of the Platonics<sup>231</sup>. A passage from Goclenius’ Greek philosophical lexicon may help to clear this puzzle.

In his *Lexicon philosophicum graecum* Goclenius assimilated “idea” to *eidos*, but also to “species”:

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<sup>227</sup> *Lexicon philosophicum*, 1068-69a; he referred to Vitus Amerbach’s natural philosophy, book II: “*Homo generat homines secundum speciem, non secundum formam*”.

<sup>228</sup> See also *Lexicon philosophicum*, 384b: according to the “*Physici*” (among whom Zabarella) impressed species are necessary for knowledge. On p. 1070, Goclenius characterized the intentional species as needed in sensation: “*Thomas docet sensationem fieri per receptionem formarum, seu specierum intentionalium obiecti. Species autem intentionales obiectorum dicuntur formae eorum sine materia (ut signum quod recipit cera annuli sine ferro, & auro) quia non sunt naturales eorum formae, sed eam tantum vim habent, ut vice eorum, una cum potentia efficiant sensationem, quo ipso concipiuntur & habentur pro ipsis formis obiectorum. Opponitur igitur speciebus realibus.*”

<sup>229</sup> *Lexicon philosophicum*, 1069.

<sup>230</sup> The identification of expressed species and illuminated phantasm stems from a misconception of the view of Thomas and that of his early opponents, such as Henry of Ghent. Already Crisostomo Javelli, Zabarella, and Piccolomini endorsed this view; cf. ch. VII, § 2.3, and ch. IX, § 1.1 and 3, respectively. See also Burgersdijk, examined in § 1.1.1.

<sup>231</sup> *Lexicon philosophicum*, 429, and 1069.

Per Ideas interdum intelliguntur species animo conceptae, vel *phantasiai* seu *phantasmata*, (...) Saepe enim species fallunt mentem. Es gehen viel dinge anders als mans meint und gedenckt. Nihil est facilius, quam se ipsum opinione decipere.<sup>232</sup>

In this passage “idea” is described as a mental image (phantasm) or a representation (species). “Idea” for Goclenius also covered “phantasia”, the Latin rendering of the Hellenistic term for mental representation. He thus resumed the Stoic view that Platonic ideas are just human thoughts<sup>233</sup>. By this time, then, the term “idea” had apparently already been detached from its theological background in the Middle Ages, where “idea” had primarily been used to refer to divine thought. This remark may serve to relativize the originality of Descartes’ use of the term “idea”. The seventeenth-century use of “idea” for human thought, and for mental representation in general, was the result of a tardy and prolonged historical process, in the development of which authors such as Ficino and Bruno had taken crucial positions<sup>234</sup>.

Goclenius’ lexicographical research on terms such as “idea”, “species” and “conceptus”, tended to emphasize the harmony between positions, rather than to bring out the historical and doctrinal differences between the various strands of the psychological and epistemological tradition. Goclenius believed that the constitutive principles of reality (ideas) are intimately connected with the cognitive principles mediating between mind and sensible reality (impressed intelligible species), as well as with the resulting mental images, representations and concepts.

#### 4.2. *Castanaeus*

Before discussing the cognitive species, Castanaeus in his philosophical lexicon gave a reconstruction of the history of the term “species”<sup>235</sup>. He distinguished between impressed species and ex-

<sup>232</sup> See *Lexicon philosophicum graecum*, Marchioburgi 1615, 103-104. This lexicon had no article on *eidos*.

<sup>233</sup> See ch. I, § 4.1. Notice, moreover, that many classical authors translated *idea* with “species”.

<sup>234</sup> See ch. VI, § 1.3, and VIII, § 3.3. Also Porzio mentioned “idea” as one of the meanings of intelligible species; cf. ch. VII, § 4.2.

<sup>235</sup> See Henricus Ludovicus Castanaeus, *Celebriorum distinctionum philosophicarum synopsis*, Lugduni Batavorum 1645, 214: “pulchritudo”, “forma dans esse

pressed species. The latter may be identified with actual sensation or with the “verbum mentis” at the intellectual level. The impressed species (a “similitudo rei” originating from the object, and received in the organ or cognitive power) he described as a “ratio sensationis & intellectionis”, triggering the soul’s first act at the sensitive and intellectual level. Of the intelligible species Castanaeus gave the following description:

(...) intelligibiles, seu habitus, seu notitiae habituales, sunt quae repraesentant quidditatem, seu essentiam rei nudatam omnibus conditionibus individualibus & materialibus: Dicuntur autem habitus, quia sunt qualitates diutius animae inhaerentes ut habitus.<sup>236</sup>

Intelligible species are intentional forms<sup>237</sup>, that is to say, they are representations of an object which remain in the intellect as habits. Castanaeus distinguished the intelligible species both from the species impressed on the intellect and from the expressed species. The latter refers to the mind’s act; elsewhere it is also described as an “intentio”<sup>238</sup> or as a formal concept:

conceptus formalis (...) [est] actualis similitudo rei quae intelligitur ab intellectu, seu, est ipsa actualis cognitio objecti. (...) Dicitur actualis ut discernatur à specie intelligibili, quae etsi est similitudo rei quae intelligitur, non tamen inhaeret intellectui ut actus, sed ut habitus.<sup>239</sup>

Thus, the intelligible species are not mediating or formal principles of knowledge (unlike the impressed and expressed species<sup>240</sup>), but the eventual outcomes of intellectual acts.

Castanaeus explained his view of the species in more detail in his analysis of intellectual abstraction. He distinguished between four types of abstraction, namely, “habitualis” (through impressed and inherent species), “actualis” (through the intellectual act),

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specificum”, “similitudo repraesentativa rei”, “natura rerum”, “prima intentio”, “praedicabilis secundus”, “imago figurata”, “accidens, seu signum visibile” (like in the Eucharist).

<sup>236</sup> *Synopsis*, 215.

<sup>237</sup> *Synopsis*, 75.

<sup>238</sup> *Synopsis*, 103: in general, “intentio” means “actus mentis”; “intentio formalis” stands for “intellectio rei prout est a parte rei” or for “actio qua mens fertur in rem”.

<sup>239</sup> *Synopsis*, 38; the description of the mental act as “formal concept” stems from Suarez.

<sup>240</sup> See also *Synopsis*, 31: impressed and expressed species are the formal cause of knowledge.



“cognitiva”, and “factiva”. The latter two, as described by Castanaeus, are rather peculiar in the context of Peripatetic cognitive psychology. Through “cognitive” abstraction the possible intellect may grasp the singular object in the imagination before the illumination of the intellect<sup>241</sup>. The “abstractio factiva” is attributed to the agent intellect:

Postquam species intentionalis traducta est ex ordine sensibili ad ordinem intelligibilem, intellectus agens abstrahendo intentionem universalis à phantasmate, facit ipsum intelligibile in actu, & sic intellectus agens abstrahit universale, & passibilis intelligit ipsum.<sup>242</sup>

Peculiar about this position is its claim that the (possible) intellect may grasp a (singular) object before the phantasms are actualized by the agent intellect, that is, before an intelligible species is produced<sup>243</sup>.

#### 4.3. *Micraelius, Scherzer, Godart, and Volckmar*

Micraelius classified the intentional species under the “physical” species<sup>244</sup>. His description of the sensible and intelligible species

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<sup>241</sup> *Synopsis*, 2: “& sic ante illustrationem Intellectus agentis, possibilis intelligit singulare cognitum objective in imaginatione, non intelligendo universale.”

<sup>242</sup> *Synopsis*, 2. Castanaeus remarked rather densely that he derived the term “factiva” from “Bachonus ex Averroë”. In the 15th and 16th centuries, John Baconthorpe enjoyed a fine reputation as interpreter of Averroes. See, for example, Agostino Nifo, *Expositio in tres libros Aristotelis de anima*, Venetiis 1553, 159va; cf. also B. Nardi, *Sigieri di Brabante nel pensiero del Rinascimento italiano*, Roma 1945, 105f.

<sup>243</sup> The view of a grasp of particulars prior to the phantasm’s illumination by the agent intellect was probably influenced by Zabarella; cf. ch. IX, § 1.1. See also *Synopsis*, 101, where Castanaeus defined the abstraction as “deductio phantasmatis de potentia ad actum: nam ante irradiationem intellectus agentis phantasma est intelligibile in potentia, & post irradiationem est intelligibile in actu.” On this same page he describes the “depuratio” as “productio speciei intelligibilis ex phantasmate”.

<sup>244</sup> Johannes Micraelius, *Lexicon philosophicum terminorum philosophis unitariorum*, Stettin 1662 (first edition Jena 1653), repr. Düsseldorf 1966, 1275-76: “species sumitur (...) (1) *physice* pro quidditate, quae esse specificat: adeoque *aut* pro forma rei, *aut* pro pulcritudine rei; *aut* pro specie sensibili seu intelligibili, quae non reales, sed spirituales & intentionales imagines objectorum à materiae concretionem liberae objectum reale sensui vel intellectui repraesentatur.” For the intentional species as “natural image”, distinguished from “effigies”, see Goclenius, *Lexicon philosophicum*, 1068-69a.

strongly resembled the views of Castanaeus<sup>245</sup>.

The terse remarks on species by Scherzer in his philosophical *Vademecum* attest to a thoroughly conventional view of (intelligible) species<sup>246</sup>.

Godart published his *Totius philosophiae summa* in 1675 as a philosophical lexicon<sup>247</sup>. His remarks on species reflect the conventional views of the later schoolmen. Intentional species bend the soul to its object. Impressed species may be compared to the seeds of objects, which fertilize the cognitive faculty and thereby trigger its act, the latter also being called expressed species<sup>248</sup>.

In a similar vein Volckmar's lexicon expressed a "communis opinio" on species. Intelligible species are images or representations of the things to be known, abstracted by the agent intellect and received by the possible intellect<sup>249</sup>.

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<sup>245</sup> See *Lexicon*, 1276, where the intelligible species is described as: "quae repraesentant intellectui quidditatem, nudatam omnibus individuantibus conditionibus". For Castanaeus influence, see also L. Geldsetzer's introduction to the reprint, on p. xiv.

<sup>246</sup> J.A. Scherzer, *Vademecum sive manuale philosophicum*, Lipsiae 1658, pars II: "Definitiones", 37, 113, and 190: "*Species* intentionalis, seu impressa, est qualitas representativa objecti, ab ipso producta in potentia, cum qua ad eliciendam sensationem, effectivè concurrit. (...) Est qualitas repraesentativa objecti, à quo emanat, & consignata in potentia cognoscente. (...) *Species* expressa, est imago vitalis, & expressa objecti à potentia & specie impressa per sensationem, tanquam ejus terminus producta."

<sup>247</sup> Petrus Godartus, *Lexicon philosophicum item, accuratissima totius philosophiae Summa*, Parisiis 1675. This volume also contains *Ventilatio deliriorum Cartesii*, on pp. 305-340. In this work, Godart mainly challenged Cartesian theology, metaphysics and physics. On pp. 315-318, he refuted Descartes' conception of perception as based on motion; on pp. 324-27, he rejected the view that the mind has a privileged seat in the brain.

<sup>248</sup> *Lexicon philosophicum*, 280-81 and 301; see also *Totius philosophiae summa*, Parisiis 1666, pp. 86-87.

<sup>249</sup> H. Volckmar, *Dictionarium philosophicum hoc est enodatio terminorum* (...), Francofurti ad M. 1675, 329: "*Intellectus agens* est potentia animae rationalis, quae illuminans Phantasma facit, ut illud de potentia intelligibili fiat actu intelligibili; *Intellectus patiens* (...) est potentia species intelligibilis (...) receptiva, eoque ipso objecto intelligibilis perceptiva"; p. 658-59: "*Species intelligibilis* est species sive imago rei intelligendae, quam à phantasmate, lumine intellectus agentis illustrato, productam, res intelligibilis repraesentat intellectui possibili."

#### 4.4. Chauvin

Chauvin's lexicon presented and discussed Peripatetic psychology from a Cartesian point of view<sup>250</sup>. For example, he regarded the Scholastic definition of cognition ("qualitas quae sit vitalis imago, & similitudo intentionalis objecti") as applying to sense perception rather than to intellectual conceiving<sup>251</sup>. Similarly, he undermined the validity of the species doctrine by pointing out that the effects of external things on the senses and on the mind do not lead to knowledge of the things themselves:

Observandum autem est, non minus proprie cognosci res ratione, quam per ideas. Notae enim, quas animo res immediatâ sensatione imprimunt, non sunt ipsae res, sed effectus earum in sensus et mentem. Per eas igitur id solum novimus, quod in nobis res efficit, non quod ipsa est.<sup>252</sup>

Other reservations about Peripatetic psychology emerge in Chauvin's discussion of the distinction between agent and possible intellect. The agent intellect is described as a faculty of the rational soul, which on the basis of phantasms produces images and impressed species by actualizing the possible intellect<sup>253</sup>. Chauvin observed that many contemporary authors ("recentiores"), among whom the Cartesians and the Gassendists, reject the agent intellect, but on different grounds. Cartesians believe that the intellect is capable of immediately grasping its objects, whereas Gassendists think of intellectual knowledge as completely dependent on sensory information<sup>254</sup>.

Chauvin defined the intentional species as "signum, simulachrum & imago objecti". He gave an extensive analysis of sensible, impressed, and expressed species, with attention to the arguments of the Peripatetics as well as to the objections of Peripatetics and "Recentiores Philosophi"<sup>255</sup>. Passing on to the intelligible species, he observed that some authors believe in native species,

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<sup>250</sup> Stephanus Chauvin, *Lexicon philosophicum*, Leeuwarden 1713 (first edition Rotterdam 1692), reprint, ed. L. Geldsetzer, Düsseldorf 1967.

<sup>251</sup> See *Lexicon philosophicum*, 112a.

<sup>252</sup> *Lexicon philosophicum*, 114a.

<sup>253</sup> *Lexicon philosophicum*, 328a.

<sup>254</sup> *Lexicon philosophicum*, 328a-b. Many Cartesians (including, for example, Le Clerc) believed that the intellect is merely passive; cf. above § 3, introduction.

<sup>255</sup> *Lexicon philosophicum*, 621b-622a.

while other authors believe that the agent intellect processes phantasms. Although his sympathies were more with this second view, Chauvin expressed his doubts about the ultimate coherence of an illumination of phantasms by the agent intellect<sup>256</sup>. He submitted the following arguments for intelligible species: (1) the parallelism between sense and intellect; (2) the indifference of the intellect; (3) the need for the object to be proportionally present to the mind in order to fertilize the latter. On the other hand, he noted the following arguments against the need for intelligible species as distinct from perception. (1) Perception represents the known thing objectively, and it does not need any distinct ideas or images. (2) Distinct species can only be thought of as being perceived, and hence the knowledge of an object would always involve a double perception, namely of the species and of the object. The former is not needed, however, God having granted to the mind a direct perception of bodies<sup>257</sup>. Chauvin remarked that many contemporary authors continue to use the terminology of impressed and expressed species<sup>258</sup>, but that they take impressed species to be "motus", that is, impressions of external bodies on the human body, nerves, and brains. These stimuli bear no resemblance to the external bodies, but only give the occasion for the mind to represent determinate objects<sup>259</sup>. When we perceive fire, for example, we experience the detached particles touching our senses and nerves. This pulsation is communicated to the mind in the brain by occasioning the generation of notions, which some authors have also called expressed species<sup>260</sup>.

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<sup>256</sup> *Lexicon philosophicum*, 622a-b; cf. 622b: "Imò Thomistae illas [sc. species intelligibiles] produci volunt ab ipsis phantasmatis illustratis, quam quidem illustrationem nemo mente etiam serenâ conceperit."

<sup>257</sup> *Lexicon philosophicum*, 622b: "Cùmque Deus mihi facultatem percipiendi corpora impertiit, simul effecit ut mentis perceptiones corpora repraesentarent citra novi entis, aut novae imaginis auxilium." The direct perception of bodies, without intermediate ideas or species, was argued by Arnauld; cf. ch. XIII, § 1.2.

<sup>258</sup> Most likely Gassendi and some of his followers; cf. ch. XI, § 3, and ch. XIII, § 2, introduction. Cf. also the position of Maignan, De la Forge and others, discussed above in § 3.

<sup>259</sup> *Lexicon philosophicum*, 622b: "(...) quae, cùm nullam habeant cum rebus objectis naturae similitudinem, nullâ aliâ de causâ earum habentur repraesentamina, quàm quòd ipsorum occasione mens res sibi faciat praesentes, easdemque in ideis suis exindè nascentibus contempletur."

<sup>260</sup> *Lexicon philosophicum*, 622b-23a.

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The views of species in seventeenth-century philosophical lexica betokened the transition from the Scholastic to the Cartesian conception of mental representation. The philological survey of Goclenius highlighted some of the historical and conceptual links between “species” and terms such as form, image, and idea. Surprisingly, Castaneus distinguished between impressed species (“ratio sensationis & intellectionis”), expressed species (the mind’s act), and intelligible species, the latter being regarded as habits, that is, as the outcome of cognitive acts. Castaneus’ views were accepted by Micraelius and Scherzer, while Godart and Volckmar took a strictly conventional view of species. Chauvin analyzed central concepts of Peripatetic psychology from the perspective of the modern philosophy. He expressed his doubts about the intelligibility of the doctrine of species and connected conceptions, such as that of a distinct agent intellect and of the illumination of the phantasms by the latter. The alternative theories of perception and cognition presented by him were clearly inspired by later followers of Descartes and Gassendi.

## CHAPTER THIRTEEN

### LATER CONTROVERSIES ON IDEAS

My aim in this chapter is to analyze the Aristotelian and Scholastic background of later controversies on ideas. In the second half of the seventeenth century, the Aristotelian view of natural reality was at long last overthrown and replaced by a mechanist one. In the field of psychology the Aristotelian view gave way to newly developed naturalist accounts or to dualist accounts in the style of Descartes. The first section of this chapter examines the controversy between Malebranche and Arnauld, with particular attention to the Peripatetic views that may have played a role in the genesis of their views on knowledge of sensible reality. The second section is devoted to John Locke's "way of ideas". I compare his view to the traditional notion of intelligible species, and discuss his early critics. In the final section I discuss the critique of species and the view of perceptual ideas in Leibniz, the last author of the seventeenth century who frequently referred to his Scholastic education, and this not only in a negative sense.

#### § 1. MALEBRANCHE AND ARNAULD

The dispute between Malebranche and Arnauld on the nature and function of ideas is germane to this study for a number of reasons<sup>1</sup>. After Malebranche had refuted the traditional theory of

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<sup>1</sup> For a brief survey of the controversy between Malebranche and Arnauld, see subsection 1.3, below. This dispute was provoked by the publication of Malebranche's *Traité de la grace* in 1680; it also involved issues such as grace and miracles. For the theological background, see, among others, St. Nadler, *Arnauld and the Cartesian Philosophy of Ideas*, Manchester 1989, 135-39; H.M. Bracken, "The Malebranche-Arnauld debate: Philosophical or ideological?", in *Nicolas Malebranche. His Philosophical Critics and Successors*, ed. St. Brown, Assen 1991, 35-48, on pp. 35 and 44; A.R. Ndiaye, *La philosophie d'Antoine Arnauld*, Paris 1991, 11f.

species in his *Recherche de la vérité*, he was accused by Arnauld of reintroducing in his psychology of cognition an intermediate entity very much like the species, namely, in his notion of idea as eternal and separate model. Moreover, also the critical literature on the epistemology of Malebranche and Arnauld often refers to the doctrine of (intelligible) species, sometimes to stress the extent to which they departed from Aristotelian philosophy, but sometimes also to stress the fact that the Peripatetic view of species may have been a source for Malebranche's theory of ideas<sup>2</sup>.

I first examine the views of ideas as espoused by Malebranche and by Arnauld (subsections 1 and 2), before turning to their controversy on this issue in subsection 3. The final subsection gives an evaluation of their respective positions, comparing them to some of the views on species developed in medieval and Renaissance disputes.

### 1.1. *Malebranche on ideas of bodies*

Malebranche's doctrine of ideas has recently attracted much attention<sup>3</sup>. In this section I offer a brief survey of his cardinal claims in this field, with particular attention to those of its aspects that are possibly related to the theory of species. Malebranche's view of perception and knowledge was strongly anti-Peripatetic<sup>4</sup>. He denied that knowledge can be generated by an active mind that is processing sensory information. The senses cannot influence the mind; moreover, the mind itself is causally inert.

#### 1.1.1. Mind and body—ideas and sensations

Malebranche's psychology is imbued with theological notions. The link between mind and God, for example, he saw as more essential than that between mind and body, although the latter bond was

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<sup>2</sup> See § 1.4, below.

<sup>3</sup> For a survey of the terminology of idea in Malebranche, see A. Robinet, "Idée dans les oeuvres complètes de Malebranche", in *Idea. VI Colloquio Internazionale del Lessico Intellettuale Europeo*, 207-221. For other critical literature, see below.

<sup>4</sup> See *Éclaircissements*, préface, in *Oeuvres Complètes*, 20 vols., Paris 1962-1978, vol. III, p. 7, where Malebranche observed with disapproval that at the universities Aristotle was still regarded as "la règle de la vérité".

reinforced by the original sin<sup>5</sup>. Mind and body are distinct entities. Malebranche did not deny that the soul may gain information about the corporeal world through the senses. In sensation and in imagination the mind perceives corporeal things by means of the sense organs<sup>6</sup>. The senses do not represent things as they are, however, but in relation to the human body's being affected by external stimuli<sup>7</sup>. In sense perception, man is inclined to attribute his sensations to the external bodies, and he is unable to grasp the latter's primary qualities<sup>8</sup>. The knowledge conveyed by the senses is confused, and it is necessary only for the preservation of the human body<sup>9</sup>.

Malebranche distinguished between, on the one hand, pure intellectual thought (which regards separate ideas), and, on the other hand, sensation and imagination. Sense perception is conditioned by brain traces, which are the causal result of external bodies impinging on the sense organs and thereby triggering a chain of motions in the nervous system<sup>10</sup>. The traces in the brain cannot cause perception; they merely occasion corresponding mental events, such as sensations and emotions<sup>11</sup>. In pure

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<sup>5</sup> *De la Recherche de la vérité*, in *Oeuvres Complètes*, vol. I, préface, 10-11; I, ch. 5, 69-75.

<sup>6</sup> *Recherche*, I, ch. 1, 43.

<sup>7</sup> *Recherche*, I, ch. 5, 77-78; for discussion, see G. Rodis-Lewis, *Nicolas Malebranche*, Paris 1963, 42-53.

<sup>8</sup> *Recherche*, I, ch. 11, 132, and ch. 13, 47-48. Secondary qualities are mere modifications of the mind; see D. Radner, *Malebranche. A Study of a Cartesian System*, Assen 1978, 87-88; cf. St. Nadler, *Malebranche and Ideas*, Oxford 1992, 15-16, for the ancient and contemporary background of this view, namely, in Democritus, Epicurus, and Lucretius, and in Galileo and Descartes (*Meditationes*, AT VII, 43), respectively.

<sup>9</sup> *Recherche*, I, ch. 10, 128f; I, ch. 20, 86-87; *Éclaircissements*, VI, OC III, 55.

<sup>10</sup> *Recherche*, I, ch. 4, 66-68; I, ch. 10, 123-28; II, I, ch. 1, 191-93, and ch. 5, 215-16. See also M. Gueroult, *Étendue et psychologie chez Malebranche*, Paris 1939, 24-27.

<sup>11</sup> *Recherche*, I, ch. 10, 129-30: in sense perception, the impinging bodies cause a passion of the sense organ, whereas the soul senses and judges; cf. II, I, ch. 5, 215-24: the "alliance" between mind and body consists in a correspondence between thoughts and brain traces, on the one hand, and emotions and motions of the animal spirits, on the other hand. The historical roots of the correspondence theory with regard to brain traces and mental events in a more narrow sense are multi-form. They include the view of a "colligantia" between sensory representations and cognitive acts in Jean de la Rochelle (ch. II, § 1.4), Olivi (ch. III, § 3.4), and Suarez (ch. X, § 1.6). See also the positions of Genua and Teofilo Zimara (examined in ch. VIII, § 1.2 and 4) regarding the generation or actualization of



intellectual thought as well as in sense perception, the mind itself is passive. God is the only true cause, and He guarantees the correspondence between ideas, sensations, and objects<sup>12</sup>.

Sensations are perishable states or modifications of the soul<sup>13</sup>, which may keep the mind from contemplation. They are void of representational content, and they should not be confused with the eternal, mind-independent ideas<sup>14</sup>. Malebranche reversed the Cartesian order of our knowledge of body and mind. In *Meditations*, Descartes had stated that the nature of mind is better known than that of the body<sup>15</sup>. Malebranche challenged this claim, arguing that bodies are perfectly known through a clear idea of extension. By contrast, the properties of the mind are intellectually obscure, because they are known only by internal sensation. The modifications and the nature of the soul are accessible to introspection ("sentiment intérieur"), but they are not known through ideas. The mind knows itself to be capable of a given sensation not through an idea of itself, but only through experience<sup>16</sup>. The sepa-

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intelligible species, latently present in the mind and corresponding to phantasms. In *Recherche*, Malebranche seemed to accept Descartes' view of the essential role of the pineal gland in the generation of knowledge; cf. I, ch. 10, 125, and II, I, ch. 1, 192-93; see also *Éclaircissements*, VI, OC III, 58. He rejected the mediation of this physiological gland in *Méditations chrétiennes*, in OC X, 13.

<sup>12</sup> *Recherche*, II, I, ch. 5, 216-17; for discussion, see M. Gueroult, *Malebranche, I, La vision en Dieu*, Paris 1955, 128-39. See also below, § 1.1.3.

<sup>13</sup> Notice that in his correspondence with Elisabeth, Descartes suggested that sensations are modes of the mind-body union; cf. AT III, 665f.

<sup>14</sup> *Recherche*, I, ch. 1, 41-42; III, I, ch. 1, 386-89, and ch. 4, 407-408; *Conversations chrétiennes*, Entretien, III, in OC IV, 68-69. For discussion of the distinction between idea and sensation in Malebranche, see M. Gueroult, *Étendue et psychologie chez Malebranche*, 16-17; idem, *Malebranche*, 37; G. Rodis-Lewis, *Nicolas Malebranche*, 71; D. Connell, *The Vision in God. Malebranche's Scholastic Sources*, Louvain-Paris 1967, 42-45; G. Dreyfus, "Entendement et sensibilité chez Malebranche", in *Sinnlichkeit und Verstand in der deutschen und französischen Philosophie von Descartes bis Hegel*, ed. H. Wagner, Bonn 1976, 27-37; F. Alquié, *Le cartésianisme de Malebranche*, Paris 1974, 154; idem, *Malebranche et le rationalisme chrétien*, Paris 1977, 21, 108; N. Jolley, *The Light of the Soul. Theories of Ideas in Leibniz, Malebranche, and Descartes*, Oxford 1990, 59-60.

<sup>15</sup> Cf. the title of the Second Meditation.

<sup>16</sup> *Recherche*, III, II, ch. 1, 415; ch. 5, 433-35, and ch. 7, pp. 448-49 and 451-53. Malebranche stressed his departure from Descartes in *Éclaircissements*, XI, 163 and 168-69. See also *Réponse à M. Régis*, in OC XVII.1, 297-99. See *Recherche*, 452; idem, in OC II, 443-46; *Éclaircissements*, XI, in OC III, 164. See also *Réponse de l'auteur de la Recherche de la Vérité au livre de Mr. Arnauld*, in OC VI, 105, 152-53, and 157. For discussion, see Gueroult, *Étendue et psychologie chez*

ration of ideas and mind entails that introspection cannot be a source of *knowledge*: a spiritual substance's inspection of itself as currently undergoing modifications cannot transcend the level of sensation.

### 1.1.2. The rejection of the intentional species

Before unfolding his theory of the vision of all things in God in the Third Book of *Recherche*, Malebranche refuted four alternative accounts of knowledge acquisition, the first being the traditional theory of species<sup>17</sup>.

Peripatetics believed that external objects emit species that resemble them, and that these species are transmitted by the external senses to the common sense. These impressed, material species are rendered intelligible by the active intellect, and may then be received by the passive intellect. The species thus 'spiritualized' are called expressed species, because they are expressed by those impressed<sup>18</sup>. It is through them that the passive intellect knows material things. Peripatetics disagreed among themselves about the number of inner senses, and many authors doubted the need for a distinct active intellect.

Malebranche refuted this view by means of a *reductio ad absurdum*. His first series of objections leaned on the fact that he took species to be small, impenetrable bodies<sup>19</sup>. Thus, (1) it is unclear

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*Malebranche*, 30-31, 52-54, 71-79, and 107; idem, *Malebranche*, 50; idem, "Psychologie cartésienne et psychologie malebranchiste", in idem, *Études sur Descartes, Spinoza, Malebranche et Leibniz*, Hildesheim-N.Y. 1970, 144-164, on pp. 144-46; Rodis-Lewis, *Nicolas Malebranche*, 104, 173, and 180; D.A. Cress, "The immediate object of consciousness in Malebranche", in *Modern Schoolman* 48(1970-71), 359-69, on p. 364; Alquié, *Le cartesianisme de Malebranche*, 14; idem, *Malebranche et le rationalisme chrétien*, 68; Radner, *Malebranche*, 73-4; T.M. Schmalz, "Descartes and Malebranche on mind and mind-body union", in *Philosophical Review* 101(1992), 281-325, in particular, pp. 302-305.

<sup>17</sup> See *Recherche*, III, II, ch. 2. Malebranche rejected the species theory elsewhere as well; cf. *Recherche*, I, ch. 14, 157; *Méditations*, OC X, 14; *Conversations chrétiennes*, Entretien III, OC IV, 78.

<sup>18</sup> For a similar description of the abstraction of intelligible species, see Maignan, *Cursus philosophicus*, 568, quoted in ch. XII, § 3.1. Notice that the term "spiritualizare" was already used by John Ponce with respect to the operation of the agent intellect regarding the corporeal object. However, Ponce emphasized that this 'spiritualization' consists merely in the production of a mental representation; cf. *Integer Philosophiae cursus*, 476a (quoted in ch. X, § 3.5.1).

<sup>19</sup> For impenetrability as a feature of matter, see *Recherche*, III, II, ch. 8, 460.

how these species, inevitably colliding with one another, can reach and penetrate the body. Considering that we are able to see a great number of objects from a single point in space, the species should be reducible to points; but this is not possible for corporeal entities. Moreover, the species of a vast number of things should be present at every point of vision, for there is no point from which these things (for example, the sun, the moon, and the sky) cannot be seen. Malebranche based his second series of objections on the variations in size to which species should be subject. Thus, (2) Peripatetics cannot explain different perceptions of the same body as appearing bigger or smaller according to their distance. Nor (3) do they have an explanation for the (partial) perception of objects under different perspectives. When we look at a cube, for example, the species of its sides are all different, and yet we see them all as equally square. Hence, the perception of the cube cannot be based on resemblant species transmitted by it. Finally, (4) the production of the species is left unexplained, for how can a body emit species without decreasing itself? Curiously, active bodies such as air lack the power to send out images, unlike coarser bodies such as stones.

Like Descartes<sup>20</sup>, Malebranche badly misrepresented the Scholastic doctrine of (sensible) species; that is to say, he failed to address the species doctrine as it had been understood by the Peripatetics themselves. What he attacked was an extremely simplified version of it, modelled more on Democritean and Epicurean effluences than on the Scholastic material but incorporeal bearers of information<sup>21</sup>. Because Aristotelian physics ruled out the transfer of accidents from one subject to another, the generation of sensible species and their reception in the sense organ was indeed hard to explain. Most Peripatetics who endorsed the

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<sup>20</sup> See ch. XI, § 1.1.2.

<sup>21</sup> That the species doctrine was not so absurd as Malebranche suggested was already noticed by A. Robinet, *Malebranche et Leibniz. Relations personnelles*, Paris 1955, 196; Rodis-Lewis, *Nicolas Malebranche*, 59-60; Alquié, *Le cartésianisme de Malebranche*, 191-92; Nadler, *Malebranche and Ideas*, 108-114. See also Gueroult, *Malebranche*, 102-106; Connell, *The Vision in God*, 7-20, for a general discussion of Malebranche's critique of Scholastic cognitive psychology, and 167-171, for an analysis of Malebranche's refutation of the species theory; Radner, *Malebranche*, 20-22.

concept of sensible species had accordingly maintained that sensible species are "propagated" through the medium, the sense organs, and the senses. Strictly speaking, this propagation should not be seen as a real transmission of impressions, but as a process of successive actualization of the potentials of the various media, that is, as something like the propagation of a wave<sup>22</sup>. Thomas had argued that by virtue of their formal structure, sensible things participate in the operation of celestial bodies, and are thus able to communicate their essential features, in the form of sensible species, to the medium and to the sense organs<sup>23</sup>. Malebranche, by contrast, basing himself on a mechanistic view of the world, believed that all physical change reduces to local motion. Hence, he was blind to the qualitative change that was supposed to be involved in the transmission of species. He replaced sensible species by bodies endowed with local motion, assimilating them to the ancient effluences and to the corporeal impressed species of Gassendi<sup>24</sup>. Notice also that Malebranche presented the theory of species as a theory of the *ideas* of bodies. Peripatetics, by contrast, generally looked upon the reception of sensible species as a condition for the generation of intelligible species and/or concepts.

According to Malebranche, the theory of species has it that the soul passively receives the resemblances of material things. He based his refutation of this claim not on the opposition between mind and matter, but on the contradictions allegedly involved in the notion of sensible species. He underscored the passivity of the

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<sup>22</sup> See, for example, the position of one of the inceptors of the species doctrine, Roger Bacon (ch. II, § 2.3); cf. also the position of Eustachius of Saint-Paul, examined in ch. X, § 2.2.2.

<sup>23</sup> See *De potentia*, q. 5, a. 8: "Haec autem est actio corporis, quae non est ad transmutationem materiae, sed ad quamdam diffusionem similitudinis formae in medio secundum similitudinem spiritualis intentionis quae recipitur de re in sensu vel intellectu; et hoc modo sol illuminat aërem, et color speciem suam multiplicat in medio. Uterque autem modus actionis in istis inferioribus causatur ex corporibus caelestibus." In this passage, Thomas developed a view similar to the doctrine of universal force in Alkindi, which, originating from the Neoplatonic doctrine of emanation, was already proposed by Grosseteste and Roger Bacon.

<sup>24</sup> Most likely, Malebranche's refutation was (also) directed against Gassendi; cf. Connell, *The Vision in God*, 171; Nadler *Malebranche and Ideas*, 109f. This is also clear from the way in which he described the impressed and expressed species. For Gassendi, see ch. XI, § 3. In the *Short Tract* (ch. XI, § 2.1.1), Hobbes, too, regarded the species as bodies endowed with local motion.

intellect by reducing the role of the agent intellect to the mere refinement of incoming species<sup>25</sup>. In this context, Malebranche did not consider the possibility that the intellect may actually be *processing* incoming sensory information. The second hypothesis refuted by Malebranche was the view that the soul has the power to form ideas of things occasioned by the impressions that objects make on the body<sup>26</sup>.

### 1.1.3. The vision in God

Malebranche also rejected other views on the acquisition of knowledge, namely, (i) the generation of the ideas by the soul itself, (ii) (passive) innatism, and (iii) knowledge through the soul's own perfections<sup>27</sup>.

Since material things cannot influence the soul, they cannot be known through themselves<sup>28</sup>. Nor is the soul able to produce its own representations<sup>29</sup>. Malebranche argued that God, who is the only true cause, guarantees our knowledge of the essences of material reality<sup>30</sup>. This entails that material things are perceived only indirectly, namely, through their ideas in God. The soul does not grasp the pure essence of God, but only insofar as it is imperfectly

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<sup>25</sup> Connell, *The Vision in God*, 171-72, draws a comparison with a theory attributed by Suarez to Scotus, according to which the angel sees the material individuals through species that it receives from the objects themselves.

<sup>26</sup> See *Recherche*, III, II, ch. 3.

<sup>27</sup> See *Recherche*, III, II, ch. 3-5. For discussion, see D. Connell, "Gassendi and the genesis of Malebranche's philosophy", in *Atti del Congresso internazionale di filosofia, Venezia 1958*, Firenze 1961, vol. XII, 109-113; idem, *The Vision in God*, 163-206; Jolley, *The Light of the Soul*, 67-74; Nadler, *Malebranche and Ideas*, 115-137.

<sup>28</sup> See also *Éclaircissements*, X, 127f.

<sup>29</sup> For the causal inefficiency of the mind, see *Éclaircissements*, I, 17-18; cf. also X, 144-47: the capacity to think cannot be attributed to the mind on the basis of the argument that it pertains to its nature, because then we would fall back on a Scholastic form of argumentation.

<sup>30</sup> See also *Éclaircissements*, XV, 211-12. For the theological motivation of Malebranche's occasionalism, cf. *Méditations*, OC X, 11-13. For the genesis of occasionalism in 17th-century philosophy, see R. Specht, *Commercium mentis et corporis*, who sees in Cordemoy the first full-blooded occasionalist; cf. the latter's *Dissertations physiques sur le discernement du Corps et de l'ame; sur la parole, et sur le système de Monsieur Descartes*, Paris 1689<sup>3</sup>. See also Alquié, *Malebranche et le rationalisme chrétien*, 24-25, for antecedents of Malebranche's occasionalism.

“participable”<sup>31</sup>. The perception of an object in God is not equivalent to a sensory experience. Rather, the vision in God is the perception of an object in a logical space, or more precisely, an understanding of the world in terms of geometrical properties<sup>32</sup>. This understanding becomes a sensory experience when it is mixed with sensation: perception is the mind’s being in contact with divine ideas ‘coloured’ by sensation. When an object is present to the body, God reveals to the mind an idea that represents its essence, while at the same time causing in us a sensation that makes us judge that the object exists—for in our knowledge of existing things there are always a pure idea and a confused sensation<sup>33</sup>.

When we perceive a sensible thing, “Dieu se trouve dans notre perception, sentiment et idée pure”<sup>34</sup>. In pure understanding the mind perceives only divine ideas. In imagination it receives the ideas with images. In sense experience it receives the ideas from God mixed with sensations corresponding to the motions in the sense organs in the presence of an external object<sup>35</sup>. God sustains the correlation between the motions of bodies and the excitations of the brain, on the one hand, and the modifications in the soul accompanying the perception of pure ideas, on the other hand<sup>36</sup>. The motions of external bodies before the sense organs do not cause ideas, but they occasion them. The most that can be said of the bodies is that they are the effective causes of the *presence* of ideas<sup>37</sup>.

<sup>31</sup> *Recherche*, III, II, ch. 6.

<sup>32</sup> See also *Conversations chrétiennes*, Entretien III, 62-73; *Éclaircissements*, 345-47. For discussion of the vision in God and Malebranche’s occasionalism, see Jolley, *The Light of the Soul*, 85-107; Nadler, *Malebranche and Ideas*. An important source for Malebranche’s view was the Scholastic doctrine of angels, dealing with the manner in which a purely immaterial being acquires its knowledge of the material world; see Connell, *The Vision in God*; cf. also Bracken, “The Malebranche-Arnauld debate”, 43.

<sup>33</sup> *Éclaircissements*, X; and *Réponse de l’auteur de la Recherche de la Vérité au livre de Mr. Arnauld*, in *OC* VI, 55-56, and *Trois Lettres*, in *OC* VI, 241.

<sup>34</sup> See *Recherche*, III, II, ch. 6; cf. *Éclaircissements*, VI, 58: a superior intelligence is active in us and represents bodies to us that exist in the external world.

<sup>35</sup> *Recherche*, “Conclusion des trois premiers livres”, 488-89. See also Jolley, *The Light of the Soul*, 104-111.

<sup>36</sup> See *Éclaircissements*, VI, 63-65; cf. VII, 73-74, and *Conversations chrétiennes*, Entretien III, 73.

<sup>37</sup> *Réponse à M. Régis*, in *OC* XVII.1, 310.

The vision in God circumvents the problem of how the mind can have knowledge of material objects without having any modification in itself to represent them. It in turn gives rise to the problem of how immaterial and eternal ideas can represent things that are material, temporal and corruptible. To solve this problem, Malebranche called on the notion of 'intelligible extension', that is, the idea or archetype of all possible material worlds.

Mais je dis que nous voyons toutes choses en Dieu par l'efficace de sa substance, et en particulier les objets sensibles, par l'application que Dieu a fait à notre esprit de l'étendue intelligible en mille manières différentes.<sup>38</sup>

Ideas of particular extended things are finite parts of a single infinite idea of extension. Sense perception consists in the perception of portions of the intelligible extension in connection with sensible qualities which are mere modifications of the mind. When we perceive the sun, for example, then what is present to the mind is an intelligible circle rendered sensible to us by a brilliant light<sup>39</sup>.

#### 1.1.4. Ideas: content and representation

Ideas are spiritual, model-like, representative entities that stand for God's essence insofar as the latter is participable<sup>40</sup>. They give content to human perception and cognition of the corporeal world. Perception takes place only when an object is directly present to the mind<sup>41</sup>. Cognition requires a type of presence to the mind of which bodies are not capable. Behind the view that ideas are entities external to the mind is the belief that their representational function requires that they are of a nature that is incompatible with their being in the mind<sup>42</sup>. Therefore, the corporeal world is perceived only in God.

<sup>38</sup> *Éclaircissements*, X, 154.

<sup>39</sup> See *Éclaircissements*, XI and IX; *Recherche*, II, II, ch. 6; *OC* XII, 46; *Trois Lettres*, 241; *Réponse à la troisième lettre de M. Arnauld*, in *OC* IX, 978; *idem*, 961-62; for discussion, see Nadler, *Malebranche and Ideas*, 19 and 62.

<sup>40</sup> Nadler sees Malebranche's ideas as essences, as pure concepts, and as exemplary causes; see *Malebranche and Ideas*, 8-9, 51, 60.

<sup>41</sup> *Conversations chrétiennes*, Entretien, III, 71-72.

<sup>42</sup> See, for example, *Conversations chrétiennes*, Entretien, III, 74: the idea of the infinite cannot be a modification of the mind. This argument would be attacked by Arnauld; cf. below § 1.3. For discussion, see Radner, *Malebranche*, 95.

Malebranche was at times ambiguous on the question whether the object of perception is the idea or the body. In *Éclaircissement* X, for example, he stated that we first perceive the idea and then the body. Earlier, however, he argued that we do not see God or his substance but the bodies<sup>43</sup>. When speaking of ideas as direct objects of perception<sup>44</sup>, Malebranche did not want to deny that we have perceptual contact with the corporeal world; he merely wanted to emphasize that the presence of ideas is a necessary condition for the mind to perceive bodies<sup>45</sup>. In this sense, then, bodies are the indirect, but ultimate objects of perception: we “see” ideas, but we are “looking at” bodies<sup>46</sup>.

Malebranche’s arguments for ideas are not inconsistent with his belief that we see external bodies. But how does mediate perception work? The perception of ideas is not sensory but intellectual. It is a cognitive grasp, a mode of apprehending material bodies which cannot be perceived through themselves<sup>47</sup>. Perception is concept-dependent, in the sense that it involves an intelligible content, a knowledge of the essence of the object perceived insofar as it is an extended body<sup>48</sup>.

### 1.2. *Arnauld’s early criticisms of Malebranche’s view of ideas*

After the publication of the first volume of *Recherche* in 1674, Malebranche’s epistemology, and more particularly his view of

<sup>43</sup> Cf. *Éclaircissements*, X, 155-56, and XVII, 347.

<sup>44</sup> See, for example, the stroll-about-heaven passage, in *Recherche*, III, II, ch. 1, in *OC* I, 413, and the analysis of Nadler, *Malebranche and Ideas*, 169-70. See also *Réponse à M. Régis*, 303: the direct object of perception is an idea, the indirect object is a body. A possible background for the stroll-about-heaven passage may have been Hobbes, *De corpore*, ch. VII, art. 1, in *Opera latina*, vol. I, 82: “non enim si coeli aut terrae magnitudines motusque computamus, in coelum ascendimus, ut ipsum in partes dividamus (...)”. For discussion, see K. Schuhmann, “Rapidità del pensiero e ascensione al cielo: Alcuni motivi ermetici in Hobbes”, in *Rivista di storia della filosofia* 40(1985), 203-227. For the item of a flying man in a different context, see also Avicenna, *Liber de anima*, I.1 and V.7, and M. Marmura, “Avicenna’s flying man in context”, in *Monist* 69(1986), 383-395.

<sup>45</sup> *Recherche*, III, II, ch. 6, *OC* I, 439; cf. *Réponse à la troisième lettre de M. Arnauld*, in *OC* IX, 959: the ultimate objects of perceptions are the bodies.

<sup>46</sup> See *Réponse à la troisième lettre*, *OC* IX, 910. Radner, *Malebranche*, 106, qualifies Malebranche’s position as a form of ‘representative realism’.

<sup>47</sup> For discussion, see Nadler, *Malebranche and Ideas*, 7, 62, and 165.

<sup>48</sup> Cf. Nadler, *Malebranche and Ideas*, 173-77.



ideas, was challenged by Simon Foucher and by Robert Desgabets in the next few years<sup>49</sup>. The ensuing controversy took a new turn when Arnauld, who had been in exile for some years in Holland, published his *Des vraies et des fausses idées* in 1683<sup>50</sup>. Arnauld criticized Malebranche's view of ideas and his related notions of intelligible extension and vision in God. To be sure, Arnauld was not against divine intervention in the human cognitive process. As he saw it, God purveys to the soul the perceptions of sensible qualities and of uncomposed objects, whereupon the soul may by itself develop discursive reasoning<sup>51</sup>.

Arnauld endorsed a central tenet of Cartesian psychology, namely, that thought is the essence of the soul. An act of thought is a modification of the soul on the occasion of cerebral motion<sup>52</sup>. Ideas are just such modifications, that is, mental acts with representational content<sup>53</sup>. Ideas cannot be distinguished from perceptual acts. It is only in reflection that ideas become objects<sup>54</sup>. Hence, Malebranche's ideas as representative, mediating entities are purely chimeric<sup>55</sup>. Idea and perception denote the same event, re-

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<sup>49</sup> For discussion, see Watson, *The Breakdown of Cartesian Metaphysics*, ch. 3-6, *passim*; Radner, *Malebranche*, 101-102. Also John Locke attacked Malebranche in one of his manuscripts; cf. *An Examination of P. Malebranche's Opinion of Seeing All Things in God*, in *Works*, vol. IX, London 1823, 211-255. For Malebranche's popularity in Great Britain, see Ch.J. McCracken, *Malebranche and British Philosophy*, Oxford 1983.

<sup>50</sup> I have used the edition published in Paris 1986.

<sup>51</sup> *Des vraies et des fausses idées*, ch. 27, 261. For God's role in human perception and knowledge, see also: ch. 5, p. 47; ch. 7, p. 62; and ch. 23, pp. 211-12.

<sup>52</sup> The body does not causally influence the generation of ideas. The motion in the brain serves as the occasion for the soul to have a perception. See *Nouvelles Objections contre Les Méditations de M. Descartes*, in *Oeuvres*, 40 vols., Paris-Lausanne 1780, tome 38, 68-69; see also A. Arnauld & P. Nicole, *La Logique ou l'art de penser*, eds. P. Clair and F. Girbal, Paris 1981<sup>2</sup>, p. 46.

<sup>53</sup> *Des vraies et des fausses idées*, ch. 2, 22-23; cf. *La Logique*, 41: idea is all that is present in the soul. For discussion of Arnauld's theory of ideas, cf. J.W. Yolton, "Ideas and knowledge in seventeenth-century philosophy", in *Journal of the History of Ideas* 13(1975), 145-165, on pp. 153-158; St. Nadler, *Arnauld and the Cartesian Philosophy of Ideas*.

<sup>54</sup> See *Des vraies et des fausses idées*, ch. 6, 52-53.

<sup>55</sup> *Des vraies et des fausses idées*, ch. 2, 26-8; ch. 4, 36. Arnauld's arguments can be summarized as follows: (1) that bodies cannot be known through themselves is an equivocal claim; (2) Malebranche's theory does not account for perceptual error; (3) God did not create us surrounded by bodies without giving us the possibility to know them directly; (4) representative ideas are superfluous in mathematics. See also Nadler, *Arnauld*, 95-98. On p. 28, Arnauld observed that Malebranche changed his mind between the first books of *Recherche* and

spectively stressing its external reference and its mental nature<sup>56</sup>. This solution resembles that of some medieval and Renaissance Aristotelians, whose critique of the species led them to identify the species with actual mental representations<sup>57</sup>.

Malebranche's theory of ideas was supposed to explain perception, but instead it made perception impossible. The view that objects cannot be perceived through themselves is equivocal. It is true that bodies cannot cause the perceptions we have of them, but it does not follow from this that they are known through representative entities distinct from the perceptions themselves<sup>58</sup>. Malebranche confused spatial presence with cognitive (or objective) presence, when he argued that the proportionate presence of the object to the mind is a necessary condition for its being perceived<sup>59</sup>. Indeed, also absent objects can be known. Moreover, the fact that bodies are material does not imply that they cannot be directly grasped by the mind<sup>60</sup>. God has created the soul in connection with the body, and has endowed it with the power to perceive corporeal reality<sup>61</sup>. Arnauld tautologically declared that a sufficient condition for an object to be perceived is its being "objectively" present. As in Descartes, this "objective being" is an

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*Recherche*, III, II. According to Arnauld, in *Recherche*, II, II, ch. 3 Malebranche endorsed the correct view of ideas; cf. also *Défence*, in *Oeuvres*, tome 38, 578. Malebranche denied that he had changed his mind, however; cf. *Réponse*, in *OC* VI, 111 and 172.

<sup>56</sup> See *Des vraies et des fausses idées*, ch. 5, 44; and ch. 6, 53-56, where he called on Descartes for support. For discussion, see M. Cook, "Arnauld's alleged representationalism", in *Journal of the History of Philosophy* 12(1974), 53-62.

<sup>57</sup> See § 1.4, below, where Arnauld's position will be compared to that of Godfrey of Fontaines, John Baconthorpe, Lefèvre d'Étaples, and Zabarella.

<sup>58</sup> *Des vraies et des fausses idées*, ch. 7, 62-63.

<sup>59</sup> *Des vraies et des fausses idées*, ch. 3-4, pp. 29-35; cf. ch. 8, 68-69: Malebranche confused bodily and intellectual vision. In ch. 4, p. 36, Arnauld showed that a similar misunderstanding led Gassendi to speculate on the materiality of the soul. In this context, on p. 35, Arnauld even invoked Aristotle, who had already emphasized that perception deals with intelligible species, and not with the object as such. This is a clear misrepresentation of Aristotle's and of the Scholastic psychology. I shall come back to Arnauld's relation with the Aristotelian tradition. See *Des vraies et des fausses idées*, ch. 4, p. 37, for the chimaera of small flying images, already present in Descartes and Malebranche.

<sup>60</sup> *Des vraies et des fausses idées*, ch. 9, 75, and also ch. 10, 82: the fact that bodies are material only precludes that we attribute knowledge to them.

<sup>61</sup> *Des vraies et des fausses idées*, ch. 10, 80; ch. 11, 93 and 99.

extrinsic denomination of the object: the object is objectively in the soul whenever it is known<sup>62</sup>.

With his notion of ideas as representative entities, Malebranche in fact reintroduced the Scholastic species he despised so much<sup>63</sup>. Against Malebranche, and referring back to Thomas' view of ideas, Arnauld held that the idea is "*id quo intelligitur*", rather than "*id quod*"<sup>64</sup>.

Arnauld set forth a purely psychological account of knowledge based on the following assumptions: (1) mental acts have intrinsic intentionality; (2) intentionality is a non-relational property of the mind (there is no real distinction between act, content, and representation); and (3) perception is a finished totality without an analyzable history<sup>65</sup>. Empirical knowledge involves only a relation between an act of the mind and an external object. Arnauld believed in the mind's being directly acquainted with physical objects. Furthermore, he postulated that the modes of the mind have a representative function: the intrinsic nature of mental acts is to make objects known<sup>66</sup>. According to Arnauld, the presence of contents in the mind needs no further explanation. He believed that the content of perception is self-revealing. Empirical knowledge is possible by virtue of the representational functions of mental modalities. This marks his account of knowledge acquisition as clearly circular<sup>67</sup>.

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<sup>62</sup> *Des vraies et des fausses idées*, ch. 5, 43-44, 46; cf. ch. 10, p. 82: being known is an extrinsic denomination of bodies.

<sup>63</sup> *Des vraies et des fausses idées*, ch. 8, 64-68. Cf. Rodis-Lewis, *Nicolas Malebranche*, 99. Notice that Arnauld saw the intentional species as the first known; cf. p. 35.

<sup>64</sup> See *Des vraies et des fausses idées*, ch. 13, 115: "On voit par là que S. Thomas ne prend pas le mot d'*idée* si généralement que je l'ay pris pour toute *perception*, qui comme telle est proprement *id quo intelligitur* (quoy qu'elle soit aussi en quelque sorte *id quod intelligitur* par la reflexion virtuelle qui luy est essentielle) mais qu'il le restreint à la perception, qui par une reflexion *expresse* sur nostre connoissance est devenu plus particulièrement *id quod intelligitur*." In general, medieval Scholastics used the term "idea" for God's thoughts; see ch. I, § 4.1.

<sup>65</sup> See S.F. García-Gómez, "Arnauld's theory of ideative knowledge: A proto-phenomenological account", in *Monist* 71(1988), 543-49.

<sup>66</sup> See J. Laird, "The legend of Arnauld's realism", in *Mind* 33(1924), 176-79; D. Radner, "Representationalism in Arnauld's theory of perception", in *Journal of the History of Philosophy* 14(1976), 96-98.

<sup>67</sup> That Arnauld gave a circular explanation of knowledge acquisition is not considered a problem by most of the critical studies. See, for example, J.W. Yolton,

### 1.3. A survey of the later debate

The publication of *Des vraies et des fausses idées* caused a heated discussion between Malebranche and Arnauld on the question of whether ideas should be seen as mind-independent objects of perception or as mind-dependent acts<sup>68</sup>. In a protracted series of polemical treatises they accused one another of misrepresenting the other's position<sup>69</sup>, and of abusing the authority of Augustine and Descartes<sup>70</sup>. This dispute has already been studied *in extenso* in several critical studies<sup>71</sup>. For present purposes, I want to focus

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*Perceptual Acquaintance from Descartes to Reid*, 61-62: Descartes stressed the semantic and cognitive nature of the object's presence to the mind, and Arnauld worked out some of the details of this approach to perceptual knowledge; Nadler, *Arnauld*, 2: Arnauld developed a sophisticated direct realistic theory of perception. More critical are A. Del Noce, "La gnoseologia cartesiana nell'interpretazione di Arnauld", in *Cartesio nel terzo centenario del «Discorso del metodo»*, Milano 1937, 259-284, on p. 284: Arnauld's realism is an "atto di fede"; and S.F. García-Gómez, "Arnauld's theory of ideative knowledge: A proto-phenomenological account", 553: Arnauld's epistemological theory failed to give a satisfactory account of the role played by objective being in our knowledge of a thing's formal nature.

<sup>68</sup> Arnauld died in 1694, but the publication of his letters in 1698 prompted Malebranche to another reaction, published in 1704; for a brief reconstruction and a chronology of the polemical treatises, see Malebranche, *OC VI*, "Introduction".

<sup>69</sup> This applies in particular to Arnauld's interpretation of the intelligible extension; cf., *inter alia*, *Défence*, in *Oeuvres*, tome 38, 367-636, on p. 533: also flies and horses would then exist in God; and a woman putting on make-up would see God in the mirror (cited by Malebranche in *Réponse*, in *OC VI*, 79). For Malebranche's reaction, see *Réponse*, in *OC VI*, 61, 79, 95-6, and *Trois Lettres*, in *OC VI*, 195-200.

<sup>70</sup> See, *Réponse*, in *OC VI*, 172, and *Trois lettres*, in *OC VI*, 214-15, where Malebranche refuted Arnauld's interpretation of Descartes. In *Défence*, p. 506, Arnauld attempted to detach Augustine from Malebranche's view of ideas.

<sup>71</sup> The most recent studies are: R. Wahl, "The Arnauld-Malebranche controversy and Descartes' ideas", in *Monist* 71(1988), 560-572; R. Glauser, "Arnauld critique de Malebranche", in *Revue de théologie et de philosophie* 120(1988), 389-410; St. Nadler, *Arnauld and the Cartesian Philosophy of Ideas*, in particular, ch. III-V; idem, *Malebranche and Ideas*, Oxford 1992; H.M. Bracken, "The Malebranche-Arnauld debate: Philosophical or ideological?"; G. Vesey, "Malebranche, Arnauld and Berkeley on the imperceptibility of outer objects" in *Nicolas Malebranche. His Philosophical Critics and Successors*, 109-115; A.R. Ndiaye, *La philosophie d'Antoine Arnauld*, ch. II; R. Watson, "Arnauld, Malebranche, and the ontology of ideas", in *Methodology and Science* 24(1991), 163-173; J. Ganault, "Les contraintes métaphysiques de la polémique d'Arnauld et Malebranche sur les idées", in *Revue des sciences théologiques et philosophiques* 76(1992), 101-116. For a reconstruction of the debate on Arnauld (and Malebranche) in the 1920's and 30's, see M. Cook, "Arnauld's alleged rep-

on one point that is particularly germane to this study, namely, the role and nature of ideas in empirical knowledge.

In a first reaction to Arnauld's *Des vraies et des fausses idées*, Malebranche defended the distinction between "sentir" and "connaître", and that between idea and perception<sup>72</sup>. A modification of the soul is the immediate object of "sentiment", and it cannot be the object of cognition nor have a representative function<sup>73</sup>. Indeed, if the modified soul were a representation, then the soul would only know itself<sup>74</sup>. He pointed out that Arnauld gave no convincing arguments for his identification of perception and idea, and that he in fact committed a "petitio principii"<sup>75</sup>. Moreover, Malebranche repudiated the accusation by Arnauld that his view of ideas would be tantamount to reintroducing the Scholastic impressed and expressed species<sup>76</sup>.

In his *Défence*, Arnauld gave a more precise account of what representation amounts to. The expressions "représenter", "représentation", and "représentatif" are equivocal or analogous terms. Representation primarily stands for a perception by the mind, in the sense of a formal representation of an object. By analogy with mental perception also paintings, images, and words may be called representations<sup>77</sup>. For this view Arnauld referred to Thomas' doctrine of analogy<sup>78</sup>. If the position of Malebranche with regard to ideas is interpreted in these terms, it leads to all sorts of bizarre conclusions. Thus, (1) the vision in God entails that we do not see bodies, but only portions of intelligible exten-

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representationalism", in *Journal of the History of Philosophy* 12(1974), 53-62, on p. 53; Nadler, *Arnauld*, 104-112; and Cook, "Malebranche versus Arnauld", in *Journal of the History of Philosophy* 29(1991), 183-99, on pp. 183-84.

<sup>72</sup> *Réponse*, OC VI, 50-56.

<sup>73</sup> *Réponse*, in OC VI, 54-55; cf. 105: the mind has only a confused "sentiment" of its own inner life; and p. 157: the idea of the intelligible extension is more clear than that of the soul.

<sup>74</sup> *Réponse*, 78; cf. 170. Malebranche ascribed to Arnauld the view that modifications are representative; for discussion, see Jolley, *The Light of the Soul*, 59.

<sup>75</sup> *Réponse*, 56, 81, 84, and 91.

<sup>76</sup> *Réponse*, 90 and 102.

<sup>77</sup> *Défence*, 584.

<sup>78</sup> *Défence*, 585, where he cited *Summa theologiae*, I, q. 13, with respect to the names of God. For the doctrine of analogy and equivocals in Aristotle and Thomas, see J. Owens, *The Doctrine of Being in the Aristotelian Metaphysics*, Toronto 1978<sup>3</sup>, in particular, I.3, 107-135.

sion; (2) the portions of the intelligible extension are objectively present to the mind only when perceived, and thus the mind is the formal cause of the intelligible extension; (3) our perceptions formally represent God<sup>79</sup>.

In the first letter of the *Trois Lettres*, Malebranche reiterated against Arnauld that knowledge of a body consists in a cognitive grasp of its geometrical properties in the intelligible extension. When a body is perceived as being actually present, this is by virtue of secondary qualities, which are identified with modifications of the mind<sup>80</sup>. If I see a sheet of white paper, for example, I see it as body in God, and as white insofar as my soul is modified<sup>81</sup>.

In his *Troisième lettre* Arnauld replied to the charge that his identification of perception and idea would be begging the question: the claim that idea and perception amount to the same thing has the distinctness of an axiom, and therefore it needs no further formal demonstration<sup>82</sup>. He once more emphasized that the term "representation" signifies first and foremost mental perception<sup>83</sup>. He also invalidated Malebranche's argument that only an idea that is itself infinite can represent the infinite, and that for this reason the idea cannot exist in the mind<sup>84</sup>. As Arnauld pointed out, this type of idea is infinite only "in repraesentando", not "in essendo"<sup>85</sup>.

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<sup>79</sup> *Défence*, 588. Arnauld already criticized the notion of intelligible extension in *Des vraies et des fausses idées*, ch. 11. In *Défence*, ch. 5, he accused Malebranche of making God extended. Malebranche replied in *OC* VI, 204 and *OC* IX, 955. For discussion of these problems, and of the related charge of Spinozism (formulated by Dortous de Mairan), see Radner, *Malebranche*, 111-118. By contrast, Ndiaye, *La philosophie d'Antoine Arnauld*, Part II, ch.'s 1 and 2, argues that what primarily concerned Arnauld in *Des vraies et des fausses idées* was not Spinozism, but Gassendism.

<sup>80</sup> *Trois Lettres*, *OC* VI, 201-202.

<sup>81</sup> *Trois Lettres*, 221.

<sup>82</sup> *Troisième lettre*, in Arnauld, *Oeuvres*, tome 40, 81-94, on p. 84; this letter of Arnauld is also reprinted in Malebranche, *OC* IX, 1027-1041.

<sup>83</sup> *Troisième lettre*, 87.

<sup>84</sup> Cf. *Conversations chrétiennes*, in *OC* IV, 74.

<sup>85</sup> See *Troisième lettre*, 88-89. Arnauld borrowed this distinction from Régis. Notice, however, that a similar distinction was already used by Thomas: intelligible species are universal "in repraesentando", and singular "in essendo". Cf. *In II Sent.*, dist. 17, q. 2, a. 1, ad 3um: "species intellecta potest dupliciter considerari: aut secundum esse quod habet in intellectu, et sic habet esse singulare; aut secundum quod est similitudo talis rei intellectae, prout ducit in cognitionem eius, et ex

In his *Réponse* to Arnauld's letter, Malebranche restated his charge of "petitio principii" with regard to the identification of perception and idea<sup>86</sup>. Perception is not an activity of the soul, but a passion which the soul undergoes when it is touched by ideas<sup>87</sup>. In addition, Malebranche pointed out that Arnauld cannot account for the perception of non-existent objects. Perception requires objects; for Arnauld, to perceive nothing would presumably mean not to perceive at all. Yet, we are capable of perceiving non-existent objects, and hence perception necessarily requires the existence of mind-independent ideas. According to Malebranche, what is immediately perceived by the soul, exists exactly as the soul perceives it<sup>88</sup>. Thus, what is finite "in essendo" cannot be infinite "in repraesentando"<sup>89</sup>.

#### 1.4. *Ideas and species: act, representation, and content*

The account of empirical knowledge in Malebranche and Arnauld was essentially different from that of the Peripatetics as well as from that of Descartes. They both rejected the Scholastic as well as the Cartesian view of mind-body interaction, and they both put strong limitations on the causal efficacy of the soul. Malebranche believed that God endowes the soul both with ideas and with sensations. Arnauld believed that the soul as such is responsible only for discursive reasoning, while the perception of sensible qualities and of uncomposed objects is due to divine intervention.

Malebranche refused to admit any intermediary entities between the mind and the object known: the cause of perception is the object of perception. Moreover, what touches the soul can only be an immaterial idea. Hence, ideas are directly perceived, and they

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hac parte habet universalitatem: quia non est similitudo hujus rei secundum quod haec res est, sed secundum naturam in qua cum aliis suae species convenit."

<sup>86</sup> *Réponse à la troisième lettre*, in *OC IX*, 903-905 and 913.

<sup>87</sup> *Réponse à la troisième lettre*, 961.

<sup>88</sup> Cf. *Recherche*, III, II, ch. 1, *OC I*, 413-14: there cannot be an act of directly perceiving an object without the perceived object being there.

<sup>89</sup> See *Réponse à la troisième lettre*, 945-54. Malebranche apparently claimed that only something that actually has the property X can be representative of X. However, it is clear that Malebranche intended his remarks to apply only to two possible features of ideas: infinity and generality. For discussion, see Radner, *Malebranche*, 66, and 99-101; Nadler, *Malebranche and Ideas*, 40-42.

serve as the basis for our mediate knowledge of bodies. Arnauld explained the nature of cognition without postulating the existence of any entities that are not psychological.

In the secondary literature, Malebranche's view of ideas has often been associated with the Scholastic doctrine of species. Already Laird asserted that Malebranche regarded the traditional species as ideas<sup>90</sup>. Del Noce observed that reification of the species leads up to Malebranche's notion of idea<sup>91</sup>. According to Bracken, Malebranche's essences can be seen as the entities which in Thomistic psychology were that by which we know, but now converted into the objects of knowledge<sup>92</sup>. Also Connell sees a link between Malebranche's ideas and Thomistic species<sup>93</sup>. Arnauld is commonly valued as an important correction to Malebranche, namely, with regard to the reintroduction of species-like representations. Sometimes Malebranche and Arnauld are criticized alike. According to Watson, for example, Arnauld exemplified the inadequacies of an Aristotelian model for explaining knowledge of objects in terms of ideas, while Malebranche exhibited the failure of a Platonic model<sup>94</sup>. As we shall see, Arnauld's position can indeed be meaningfully related to positions formulated in earlier debates on species.

The comparison between Malebranche's and Arnauld's views of ideas and the traditional doctrine of species is often based on a misconception of the latter. Indeed, some of the critical studies mentioned above misinterpret the intelligible species as the primary known<sup>95</sup>. Closely connected to this error is the tendency to interpret the views of the authors discussed here in terms of direct

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<sup>90</sup> J. Laird, "The legend of Arnauld's realism", in *Mind* 33(1924), 176-79, on p. 176: "Traditionally, the doctrine which Arnauld is here attacking, is the doctrine of the *species impressa*. These 'species', 'notions', or 'phantasms' may or may not have been spiritualised: but in any case they were generally held to be 'ideas' by Malebranche and others."

<sup>91</sup> A. Del Noce, "La gnoseologia cartesiana nell'interpretazione di Arnauld", on p. 273.

<sup>92</sup> H. Bracken, "Berkeley and Malebranche on ideas", in *Modern Schoolman* 41(1963-64), 1-15, on pp. 6-7.

<sup>93</sup> D. Connell, *The Vision in God*, 361.

<sup>94</sup> R.A. Watson, "Arnauld, Malebranche, and the ontology of ideas", 163.

<sup>95</sup> See Bracken, "The Malebranche-Arnauld debate", 36-37; cf. Nadler, *Arnauld*, 3.



realism versus representationalism. As I have shown elsewhere, Peripatetic epistemology was for the most part marked by the co-existence of direct realism with the belief that perception and cognition occur through causally mediating entities. The theory of intelligible species opted for a formal mediation in intellectual cognition based on unknown representations, involving no inference whatsoever from immediately perceived (mental or inner) objects to mediately perceived (physical) objects<sup>96</sup>.

With regard to Arnauld and Malebranche, the following points should be mentioned here. Malebranche did not deny that we perceive bodies, but he thought that they cannot be perceived by themselves. The mind knows the geometrical properties of bodies through separate ideas, as 'portions' of the intelligible extension. Malebranche sometimes expressed his view of (mediate) perception in a way that invites misinterpretation<sup>97</sup>. Moreover, his account left it unclear how sensation and idea are connected. On the other hand, however, Malebranche's arguments for ideas are not inconsistent with his belief that we perceive external objects. It would be misleading, then, to qualify this position as representationalism or as indirect realism, for the essential structure of the corporeal world can be known only in God<sup>98</sup>.

Against Malebranche, Arnauld held out that the mind in its mental acts or modifications has a direct grasp of the essences of bodies. Earlier commentators have tried to charge this position with representationalism, arguing that it involves mental acts as mediating between mind and object<sup>99</sup>. This interpretation has rightly been challenged<sup>100</sup>. On the other hand, however, it is equally problematic to qualify Arnauld's position as a form of direct realism. Arnauld failed to explain how mental acts or modifi-

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<sup>96</sup> See vol. I, Introduction.

<sup>97</sup> See the famous stroll-about-heaven passage in *Recherche*, III, II, ch. 1.

<sup>98</sup> Malebranche's epistemology has been qualified as 'representative realism' by Radner, *Malebranche*, 107.

<sup>99</sup> Cf., for example, Reid, reported by Cook, "Malebranche versus Arnauld", on p. 183, and A.O. Lovejoy, "'Representative ideas' in Malebranche and Arnauld", in *Mind* 32(1923), 449-461, on p. 459-460.

<sup>100</sup> See M. Cook, "Arnauld's alleged representationalism", on p. 53: the controversy between Laird and Ginsberg, on the one hand, and Lovejoy and Church, on the other hand, is a spurious debate, for both parties misinterpret Arnauld's theory of perception.

cations may represent material objects<sup>101</sup>, and he regarded the cognition of uncomposed objects as being endowed to the mind by God, rather than as the result of the mind's actively and immediately grasping the invariants in sensible reality.

After these preliminary remarks, let me be somewhat more specific about the possible relationship between the view of ideas in Arnauld and Malebranche and the traditional doctrine of species. Arnauld believed that there is a strict relation between mental act, representation, and content: ideas are mental acts with representational content. This view is comparable to Scholastic alternatives to the doctrine of species, and to some Renaissance interpretations of the intelligible species. Medieval critics of the species, such as Godfrey of Fontaines and John Baconthorpe, argued for an identification of the intelligible species with the mental act<sup>102</sup>. William of Ockham rejected all species whatsoever and explained knowledge on the basis of objects and mental acts. According to Ockham, the mind has an intrinsic capacity for grasping the particular and universal features of sensible reality, which it expresses in a mental language<sup>103</sup>. Also some Aristotelians of the early Italian Renaissance (for example, Achillini, Bacilieri, and Nifo) assimilated the species to (primary) mental acts<sup>104</sup>.

Arnauld's view of ideas was very similar to the interpretation of Peripatetic psychology by Lefèvre d'Étaples and by Zabarella. Lefèvre argued that intellective cognition consists in an intimate union of content, act, and representation. Without rejecting the species, he endorsed Aristotle's identity claim: the mental act coincides with the actual intelligible and with the actualized intellect. This means that the intelligible species arising in mental acts may be considered as intelligible in act, namely, insofar as they are produced by the object. Insofar as they are received by the intel-

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<sup>101</sup> This difficulty was inherent to the Cartesian view of the mind; cf. also Régis' position, examined by Alquié, *Le cartésianisme de Malebranche*, 153.

<sup>102</sup> See ch. III, § 3.3, and ch. IV, § 2.2. Also Olivi suggested a construction of this kind, see ch. III, § 3.4.

<sup>103</sup> See ch. IV, § 3.1.

<sup>104</sup> Cf. ch. VI, § 2.2-3, and § 3.2-3.

lect, they may be identified with the intellection<sup>105</sup>. Zabarella, too, rejected a real distinction between intelligible species and primary mental act. Intellectual acts are impossible without the human mind receiving something. However, this reception does not entail that there are mediating representative entities, prior to the mental act and grounding it. Borrowing a rather problematic notion from Caietan, Zabarella saw the species as “formally” intelligible: being the causal results of the illumination of phantasms, intelligible species coincide with the mental act. Impressed species stand for the act of cognition insofar as the latter is related to external objects<sup>106</sup>. This view resembled that of Arnauld, who called perception an act insofar as it is a mental event, and who called it idea in relation to the content grasped. Similarly, Arnauld, too, presumed that the mind receives something—but from God rather than from the sensible realm, namely, ideas/perceptions of sensible qualities and of uncomposed objects.

At one point in his *Défence*, Arnauld charged Malebranche with endorsing a form of Averroism<sup>107</sup>. In all fairness, however, we should say that Malebranche’s view of ideas was rather more similar to the position of Avicenna (also endorsed by Hurtado de Mendoza in the seventeenth century<sup>108</sup>) than to that of Averroes with regard to the generation of intellectual cognition. According to Avicenna, the human mind for its cognitive grasp of sensible reality depends on the emanation of intelligible forms from the separate agent intellect. Already in the early reception of Avicenna’s views in the thirteenth century, this agent intellect had been identified with God<sup>109</sup>. In Avicenna, the sensory representa-

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<sup>105</sup> *Paraphrasis de anima*, Parisiis 1525 (first ed. 1492), 223r: “Consimili quoque modo existimandum est idem re ipsa esse intelligibile actu & intellectum actu atque intellectionem, utpote speciem intelligibilem ab obiecto in ipso intellectu efformatam, ratione tamen diversa sunt. Nam ea species quatenus ab obiecto potentiaque intelligibili perficiscitur, dicitur intelligibile actu quia actionis quidem rationem obtinet; quatenus vero eadem in intellectu recipitur ut subiecto, dicitur intellectus actu atque intellectio, quia perinde passionis rationem sortitur.”

<sup>106</sup> Cf. ch. IX, § 1.1.

<sup>107</sup> See *Défence*, 397.

<sup>108</sup> For discussion of Avicenna and Hurtado, see ch. I, § 3.2 and ch. X, § 2.2.4, respectively. For divine intervention in the cognitive process, see also Peñafiel’s position, examined in ch. XII, § 2.4.

<sup>109</sup> See ch. II, § 1.2 and 4; cf. also the positions of John Peckam and Buridan, discussed in ch. III, § 3.1 and ch. IV, § 3.2, respectively.

tions embedded in the physiological structure of the brain prepare the emanation of intelligible forms, but they do not cause it. Similarly, brain traces in Malebranche serve as the occasion for God to bring the mind into contact with ideas.

Like traditional intelligible species, Malebranche's ideas have an instrumental function. Although he sometimes stressed the fact that they are the (direct) objects of perception, there can be no doubt that ideas, in his view, have a mediating role in the perception of sensible things. Ideas terminate the intellect's perception only in the case of knowledge of non-existing things. Malebranche's view that bodies are perceived by the mind only through its 'perceiving' ideas, may be compared to the view that species are the objects of intellectual cognition. This had been the view of Latin Platonics such as Calcidius, as well as of medieval and Renaissance Neoplatonics, including the early followers of Avicenna in the West, Dietrich of Freiberg, Ficino, Polo, and Bruno<sup>110</sup>. Species had been seen as mental content (that is, as the result of primary knowledge acquisition) by opponents of the traditional species doctrine such as Olivi, and also by Gregory of Rimini and Peter of Ailly, who had integrated the traditional species within a doctrinal context inspired on Ockham<sup>111</sup>. Olivi, Gregory, and Ailly had argued that in the knowledge of a thing that has already been known before, the mind grasps first the species as its mediate object. Of course, there also was a capital difference between these authors and Malebranche, for Malebranche definitely placed ideas outside the mind.

In contrast to the doctrine of intelligible species, Malebranche denied that the senses have any positive role in the generation of intellectual acts. He also refused to give to the mental act an intrinsic representational function, as is clear from his controversy with Arnauld. This made his position essentially different not only from the positive doctrine of intelligible species, but also from the

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<sup>110</sup> See ch. I, § 4.1, ch. II, § 1, ch. III, § 5.2, ch. VI, § 1.3, ch. VIII, § 1.3 and 3.3, respectively.

<sup>111</sup> See ch. III, § 3.4, ch. IV, § 3.4, and ch. V, § 1.1. Cf. also the position of Fabro (examined in ch. X, § 2.2.1), who attributed to Thomas the view that known species have a role in intellectual knowledge; see *Philosophia naturalis Io. Duns Scoti*, 510a: "[Thomas] vult quod species ipsa sit forma intellecta, mediante qua intellectus intelligat."

principal alternatives developed by Peripatetic authors in the Middle Ages and in the Renaissance, namely, (1) the view of the mind as having an intrinsic capacity for extracting the invariants of sensory representations (defended in various forms by Henry of Ghent and Ockham, for example), and (2) the identification of species and actual cognition (defended by many medieval and Renaissance authors, see above). Thus, Malebranche departed from Scholastic psychology of perception as well as from standard Cartesianism, which based cognition on mind-dependent representations. By contrast, Malebranche argued that actual mental representation is based on the mind's connection to a separate realm of divine ideas. Unlike Avicenna and his followers, he had no theory of ideas as emanating from God into the soul. According to him, the intimate connection between the soul and God makes it possible for the mind to contact the logical space of intelligible extension, that is, God's essence insofar as it can be participated in.

## § 2. JOHN LOCKE AND HIS CONTEMPORARIES

When Scholastic philosophy lost much of its influence at universities in the later seventeenth century, psychological theory in Great Britain bloomed into a large variety of positions. For example, the Gassendist Walter Charleton endorsed a theory of species inspired on Epicurean effluences<sup>112</sup>. A most peculiar position was developed by Hooke. Like Descartes, he thought that the immaterial soul has its seat in the brain. Unlike Descartes, however, he added to this that ideas are *material*, in the sense that they are produced

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<sup>112</sup> Walter Charleton, *Physiologia Epicuro-Gassendo-Charltonia: Or a Fabrick of Science Natural, upon the Hypothesis of Atoms (...)*, London 1654 (reprint London-N.Y. 1966). See, in particular, Book III, ch. 2-3, on visible species and vision. Charleton argued that species are substantial effluxes. He rejected the Scholastic species as accidental entities; the Scholastics were unable to explain the production and propagation of accidental species. He also expressed grave doubts about Descartes' theory of vision as developed in *Dioptric*; cf. *Physiologia Epicuro-Gassendo-Charltonia*, 136-151. For discussion, see A.E. Shapiro, "Kinematic optics: A study of the wave theory of light in the 17th century", in *Archive for History of Exact Science* 11(1973), 134-266, on p. 139; K. Hutchison, "What happened to occult qualities in the Scientific Revolution?", in *Isis* 73(1982), 233-53, on p. 244; J.J. Macintosh, "Perception and imagination in Descartes, Boyle, and Hooke", in *Canadian Journal of Philosophy* 13(1983), 327-352, on p. 332.

in the brain and preserved in an organic memory<sup>113</sup>. Hooke was convinced that brain and soul somehow interact, but he professed that he was unable to explain just how<sup>114</sup>. Various other lines were followed by Cambridge Platonists, most notably including Ralph Cudworth, who opted for a form of Platonic nativism<sup>115</sup>. By the end of the century Newton would implicitly refute the species doctrine in his optics<sup>116</sup>.

This was the philosophical climate in which John Locke developed his way of ideas<sup>117</sup>. In the first subsection I examine Locke's psychology of cognition and its possible relations to the traditional doctrine of (intelligible) species. The second subsection deals with Richard Burthogge, one of Locke's first disciples, while the final subsection is a discussion of the first critical reactions to Locke's *Essay*.

### 2.1. John Locke on perceptual ideas

The view of ideas put forward in *An Essay concerning Human Understanding*<sup>118</sup> was strongly influenced by the accounts given by

<sup>113</sup> Robert Hooke, *Lecture of Light*, in *The Posthumous Works*, London 1705, 71-148, on pp. 140-144; on p. 81, Hooke refers to the theory of species. For discussion of Hooke's views, see A.E. Shapiro, "Kinematic optics: A study of the wave theory of light in the 17th century", 188f; J.J. Macintosh, "Perception and imagination in Descartes, Boyle, and Hooke", 346-50.

<sup>114</sup> *Lecture of Light*, 147: "And though I cannot conceive how the Soul, which is incorporeal, should move and act upon the Ideas which are corporeal, or how these on the other side should by their Properties, Qualifications and Motions, react upon and influence the Soul, yet I am assured, that such Effects are performed both by the one and the other beings; and without them, neither the Sensation, Cognition, Remembling, our Ratiocination, could be performed." For a similar position in Locke, see below § 2.1.1.

<sup>115</sup> See Ralph Cudworth, *The True Intellectual System of the Universe*, London 1678, in particular, 718-36. For discussion of Cudworth's epistemological views, see L. Gysi, *Platonism and Cartesianism in the Philosophy of Ralph Cudworth*, Bern 1962, ch. II; see also F.J. Powicke, *The Cambridge Platonists. A Study*, London-Toronto 1926 (reprint Westport (Connecticut) 1970), 110f.

<sup>116</sup> Isaac Newton, *Opticks: or a Treatise of the Reflections, Refractions, Inflections and Colours of Light*, London 1721<sup>3</sup> (first edition 1704), 350f.

<sup>117</sup> For discussion, see also J. Gibson, *Locke's Theory of Knowledge and Its Historical Relations*, Cambridge 1917, 236-40, on the Cambridge Platonists; R.L. Armstrong, "Cambridge Platonists and Locke on innate ideas", in *Journal of the History of Ideas* 30(1969), 187-202; G.A.J. Rogers, "Locke, Newton, and the Cambridge Platonists on innate ideas", in *Journal of the History of Ideas* 40(1979), 191-205.

<sup>118</sup> I have consulted the edition by Peter H. Nidditch, Oxford 1975.

earlier English<sup>119</sup> and continental writers. In the late 1650's, studying the work of Descartes liberated Locke from Scholastic philosophy<sup>120</sup>. Most likely also Gassendi was an important source of inspiration for the development of Locke's ideas in psychology and epistemology<sup>121</sup>. Furthermore, Locke closely followed the debate between Arnauld and Malebranche<sup>122</sup>, and he was acquainted with various other continental authors, such as Nicole, Pascal, Clauberg, and De la Forge<sup>123</sup>.

My plan in this subsection will be as follows. I first examine Locke's account of the origin of simple ideas of sensation. This will be followed by a survey of the various meanings attributed to the term "idea" by Locke, and of the issues raised by his approach. I end with canvassing the possible relations between the doctrine of (intelligible) species and Locke's view of ideas.

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<sup>119</sup> Besides Boyle, Hooke, and the Cambridge Platonists, also Hobbes should be mentioned here; cf. ch. XI, § 2.

<sup>120</sup> See *Works*, London 1823, vol. IV, 48-49; cf. J. Gibson, *Locke's Theory of Knowledge and Its Historical Relations*, p. 205; Ch.S. Ware, "The influence of Descartes on John Locke. A bibliographical study", in *Revue internationale de philosophie* 4(1950), 210-230. For Descartes' influence in Great Britain, see G.A.J. Rogers, "Descartes and the English", in *The Light of Nature*, Dordrecht 1985, 281-302; A. Pacchi, *Cartesio in Inghilterra. Da More a Boyle*, Bari-Roma 1973.

<sup>121</sup> R.I. Aaron, *John Locke*, Oxford 1937, pp. 30-37, traces the influence of Gassendi in the first Draft of the *Essay* (1671). Locke was acquainted with Gassendi through Bernier, *Abrégé de la philosophie de Gassendi*; see R.W.F. Kroll, "The question of Locke's relation to Gassendi", in *Journal of the History of Ideas* 45(1984), 339-359, on p. 340. However, the first Draft of the *Essay* had been virtually completed three years before Locke met Bernier. On p. 347, Kroll observes that Locke also possessed Stanley's *The History of Philosophy*, which appeared between 1655 and 1662. For discussion, see also F. Duchesneau, *L'empirisme de Locke*, La Haye 1973, pp. 93-119; R.W. Puster, *Britische Gassendi-Rezeption am Beispiel John Lockes*, Stuttgart-Bad Cannstatt 1991; and Th. Lennon, *The Battle of the Gods and the Giants. The Legacies of Descartes and Gassendi, 1655-1715*, Princeton 1993. However, many similarities between Gassendi's and Locke's psychological views can be put down to their common sources in ancient atomism and scepticism.

<sup>122</sup> J.W. Yolton, "Ideas and knowledge in seventeenth-century philosophy", 146; Duchesneau, *L'empirisme de Locke*, xiii-xiv.

<sup>123</sup> Ch.J. McCracken, *Malebranche and British Philosophy*, Oxford 1983, pp. 148-49.

### 2.1.1. The generation of simple ideas of sensation

Locke's prime aim in the *Essay* was to give an account of the logical presuppositions of our claims to knowledge. At the outset of the *Essay*, he declared that his intention was not to go into the correlates of sensation on the physical and physiological side, that is:

by what Motions of our Spirits, or Alterations of our Bodies, we come to have any Sensation by our Organs, or any *Ideas* in our Understandings; and whether those *Ideas* do in their Formation, any, or all of them, depend on Matter, or no.<sup>124</sup>

A crucial aspect of Locke's historical and plain method was to accept facts of the matter for what they are, without seeking their ultimate explanation. Indeed, in the first book Locke remained quite vague about the origin of our ideas. The senses first let in particular ideas and "furnish the yet empty Cabinet". Our first ideas are thus imprinted by external things<sup>125</sup>. In the second book, Locke was more specific about the various moments involved in the process leading up to the presence of ideas in the mind.

Sensible qualities force themselves onto the mind through the senses, which serve as the medium between the mind and external bodies. The senses convey to the mind the various perceptions of things as they variously affect the senses. In this way the mind comes to have perceptions or ideas of sensible qualities<sup>126</sup>. The human mind receives the ideas of sensation passively. When external bodies affect the sense organs, the mind is forced to receive the impressions and cannot avoid the perception of the ideas annexed to them<sup>127</sup>. Moreover, these ideas, which the sensible qualities produce in the mind, are simple, and they are the objects of clear and distinct perceptions<sup>128</sup>. Simple ideas are suggested to the mind, but they are not made by it. The veracity of these ideas is guaranteed by the combined fact that they depend on the things, while the

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<sup>124</sup> *Essay*, I.i.2.

<sup>125</sup> *Essay*, I.ii.15.

<sup>126</sup> *Essay*, II.i.3 and 6.

<sup>127</sup> *Essay*, II.i.25.

<sup>128</sup> *Essay*, II.ii.1 and II.viii.1.



mind is passive in receiving them<sup>129</sup>. This view has Aristotelian and Stoic antecedents<sup>130</sup>.

The simple ideas of sensation are produced by different degrees and different modes of motion in the animal spirits, agitated by the external objects. The ideas in the mind are not (always) resemblances of something inherent in the object:

Whatsoever the Mind perceives in it self, or is the immediate object of Perception, Thought, or Understanding, that I call *Idea*; and the Power to produce any *Idea* in our mind, I call *Quality* of the Subject wherein that power is. Thus a Snow-ball having the power to produce in us the *Ideas* of *White*, *Cold*, and *Round*, the Powers to produce those *Ideas* in us, as they are in the Snow-ball, I call *Qualities*; and as they are Sensations, or Perceptions, in our Understandings, I call them *Ideas*: which *Ideas*, if I speak of sometimes, as in the things themselves, I would be understood to mean those *Qualities* in the Objects which produce them in us.<sup>131</sup>

Locke distinguished between primary qualities such as “bulk, figure, texture and motion”, and secondary qualities such as colours, sounds, and tastes<sup>132</sup>. Speaking in general, a sensible quality is de-

<sup>129</sup> See *Essay*, II.xxx.2 and IV.iv.4.

<sup>130</sup> According to Aristotle, truth and falsity do not apply to the (simple) apprehension of uncomposed objects; cf. ch. I, § 1.3. In *Essay*, II.xxxi.12, Locke identified the ideas as *ektypa*, that is, as a sort of (adequate) copies: “Because being intended to express nothing but the power in Things to produce in the Mind such a Sensation, that Sensation, when it is produced, cannot but be the Effect of that Power.” Cf. the definition of the Stoic cognitive apprehension by Diogenes Laertius, *Lives of the Eminent Philosophers*, VII.50 (reported in ch. I, § 1.4.1); cf. Sextus Empiricus, *Adv. Math.*, VII.248, and Cicero, *Academica*, II.77. See also Chrysippus, reported in *Hellenistic Philosophers*, eds. Long & Shields, Cambridge 1987, 39B (=Aetius, *Placita*, IV.12.1): “An impression is an affection occurring in the soul, which reveals itself and its cause. Thus, when through sight we observe something white, the affection is what is engendered in the soul through vision; and it is this affection which enables us to say that there is a white object that activates us.”

<sup>131</sup> *Essay*, II.viii.8. Notice, that Locke often used the terms *idea* and *quality* interchangeably; see J.W. Yolton, *Locke and the Compass of Human Understanding*, Cambridge 1970, 120.

<sup>132</sup> *Essay*, II.viii.10. There is also a third sort, namely, the power of qualities to produce new ideas by the same primary qualities. With respect to the distinction between primary and secondary qualities, Locke had been influenced by Robert Boyle; cf. Robert Boyle, *The Origin of Forms and Qualities According to the Corpuscular Philosophy* (first published in 1666), in Robert Boyle, *Selected Philosophical Papers*, ed. M.A. Stewart, Manchester 1979, p. 13: real and physical in the bodies are only size, shape, motion or rest. For discussion, see R. Jackson, “Locke’s distinction between primary and secondary qualities”, in *Locke and Berkeley. A Collection of Critical Essays*, eds. Ch.B. Martin and D.M. Armstrong,

defined as a power to produce sensation in the mind. Both primary and secondary qualities produce ideas in the mind, but the ideas of primary qualities resemble patterns that really exist in bodies, whereas the ideas produced by secondary qualities bear no resemblance at all to something in the bodies<sup>133</sup>. Secondary qualities are mere powers in bodies to produce sensations in the mind. More precisely, the ideas of sweet, blue or warm things are caused by specific combinations of bulk, figure and motion in the insensible parts of bodies<sup>134</sup>.

On more than one occasion Locke professed himself to be unable to explain the production of ideas in any detail<sup>135</sup>. Critical studies have blamed Locke for not dealing with the physical production of sensation through the organs, nor with the production of ideas in the understanding, nor even with the question of whether ideas depend on matter as their source<sup>136</sup>. According to

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New York 1968, 53-77; Ph. Cummins, "Perceptual relativity and ideas in the mind", in *Phenomenological Research* 24(1963), 202-214, on pp. 204-206; E.M. Curley, "Locke, Boyle, and the distinction between primary and secondary qualities", *Philosophical Review* 81(1972), 438-464; G.A.J. Rogers, "Boyle, Locke and reason", in *Journal of the History of Ideas* 27(1966), 205-216; see also I.C. Tipton, "Introduction", in *Locke on Human Understanding*, Oxford 1977, 10. Already Democritus, Epicurus and Lucretius had argued that (some) perceptual qualities depend on the perceiving subject, thereby suggesting a similar distinction; cf. Aristoteles, *De sensu*, ch. 4, 441a30-442b27; Diogenes Laertius, *Lives*, X.68-69; and Lucretius, *De rerum natura*, II.748 and 795-864. See also E. Krakowski, *Les sources médiévales de la philosophie de Locke*, Paris 1915, 97. For a possible Pyrrhonist background, see M. Brandt Bolton, "Locke and Pyrrhonism: The doctrine of primary and secondary qualities", in *The Skeptical Tradition*, ed. M. Burnyeat, Berkeley-London 1983, 353-375. For the distinction between primary and secondary qualities in Descartes, see *Principia*, in *AT* VIII.1, 322-23.

<sup>133</sup> For discussion, see R. Cummins, "Two troublesome claims about qualities in Locke's *Essay*", in *Philosophical Review* 84(1975), 401-418.

<sup>134</sup> *Essay*, II.viii.11-17; cf. II.viii. 22-26.

<sup>135</sup> See *An Examination of P. Malebranche's Opinion of Seeing All Things in God*, in *Works*, vol. IX, 217: "Impressions made on the retina by rays of light, I think I understand; and motions from thence continued to the brain may be conceived, and that these produce ideas in our minds, I am persuaded, but in a manner to me incomprehensible"; cf. p. 229.

<sup>136</sup> See Aaron, *John Locke*, 96; R.F. Anderson, "Locke on the knowledge of material things", in *Journal of the History of Philosophy* 3(1965), 205-215, on p. 205; G. Buchdahl, *Metaphysics and the Philosophy of Science. The Classical Origins: Descartes to Kant*, Oxford 1969, pp. 225-228, emphasizes the gap between theoretical structure and the empirical realm; R.M. Adams, "Where do our ideas come from?—Descartes vs. Locke", in *Innate Ideas*, ed. St.P. Stich, Berkeley (L.A.) 1975, 71-87, on pp. 78-79; H.E. Matthews, "Locke, Malebranche and the representative theory", in *Locke on Human Understanding*, ed. I.C. Tipton,

Locke, we are not aware of the sensory impulses that hit us but only of what is generated within our minds. There is certainly a transition from nerve impulse to mental content, but Locke had very little to say about the mechanism that accomplishes this, since that mechanicism as such is experientially inaccessible to us<sup>137</sup>. Only this much is clear, that the presence of ideas relies on the interaction between objects, neurophysiological processes, and the mind. Notwithstanding his declared intention not to deal with such matters<sup>138</sup>, Locke gave some valuable suggestions for how to understand the physical and physiological aspects of sensation and of the generation of simple ideas.

Ideas are produced by impulses: motions caused by external bodies continue inward through the nerves or the animal spirits to the brain or the seat of sensation, where they produce in the mind the ideas that we have of these bodies. Considering that we are able to perceive at a distance, it is evident that certain particularly imperceptible bodies must come from the external bodies to the eyes and convey to the brain a motion that produces these ideas. Ideas of both primary and secondary qualities are produced by insensible particles operating on the senses<sup>139</sup>. In *An Examination of P. Malebranche*, Locke espoused a similar view of the physical aspects of perception. Material rays of light may bring visible species into the eye. From the impressions made by these rays motions are propagated to the brain through the nerves. These motions produce ideas in the mind<sup>140</sup>.

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Oxford 1977, 55-61, on p. 59: the leap between body (brain) and mind remains a mystery; J.W. Yolton, "The way of ideas: A retrospective", in *Journal of Philosophy* 87(1990), 510-516, on p. 515.

<sup>137</sup> *Essay*, II.xxiii.28; IV.iii.12-14 and 28; cf. *Remarks upon some of Mr. Norris's books, Wherein he asserts P. Malebranche's Opinion of our seeing all Things in God*, in *Works*, vol. X, 248. An explanation of Locke's "ignorance" (cf. *Essay*, IV.iii.12-14) about the generation of ideas is given by J.W. Yolton, "Mirrors and veils, thoughts and things: The epistemological problematic", in *Reading Rorty. Critical Responses to Philosophy and the Mirror of Nature*, ed. A.R. Malachowski, Oxford 1990, 58-73, on p. 68: Locke is not an inspectionist, but a natural philosopher.

<sup>138</sup> See *Essay*, II.viii.22: "I have in what just goes before, been engaged in Physical Enquiries a little farther than, perhaps, I intended."

<sup>139</sup> See *Essay*, II.viii.11-12.

<sup>140</sup> *Examination*, in *Works*, vol. IX, 217.

Notice, first of all, that Locke's account is remarkably similar to the doctrine of species multiplication and to the theory underlying it, namely, Alhazen's optics. I shortly return to Locke's relation with the Peripatetic tradition in more detail<sup>141</sup>. Although Locke said that he was unable to explain the generation of ideas in the mind, he gave some important clues to solving this problem by identifying motion as the cause of this generation. Bodies, by means of the motion peculiar to them, mechanically contribute to the existence and nature of ideas. This crude model for explaining the generation of ideas in terms of impulse and bodily motion suggests that Locke saw motion as a possible link between matter and mind<sup>142</sup>, a bridge for 'theoretical voyages' between the realms of cerebral matter and mental non-matter<sup>143</sup>. By taking motion as a broad explanatory principle of action, Locke successfully avoided both materialism and the precarious implications of Cartesian dualism<sup>144</sup>.

### 2.1.2. Ideas in the mind

Locke's notion of ideas, serving as the basis and the vehicle of all knowledge, and denoting that which occurs in the mind, encompassed, *inter alia*, objects of perception, images, mental acts, and concepts. How to make sense of this extremely broad use of the term idea? It is hardly surprising that the variety of entities subsumed under "idea" has inspired a wide range of interpretations<sup>145</sup>. In the older literature Locke has often been interpreted as

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<sup>141</sup> Locke was well aware of this resemblance, and he held out against Malebranche that his views were not susceptible to the latter's critique of the species in *Recherche*, III, II, ch. 3; see above § 1.1.2, and below § 2.1.3.

<sup>142</sup> Already Hobbes had hypothesized motion as the agent throughout the process of sensation. The action of bodies causes a reaction in the soul; this explains the causation of perception and primary ideas; cf. ch. XI, § 2.

<sup>143</sup> See also *Remarks upon some of Mr. Norris's books*, 256: "and it seems probable that, in us, ideas depend on, and are some way or other the effect of motion".

<sup>144</sup> For this analysis I am indebted to P.J. White, "Materialism and the concept of motion in Locke's theory of sense-idea causation", in *Studies in the History and Philosophy of Science* 2(1971), 97-134.

<sup>145</sup> See, among others, R.I. Aaron, *John Locke*, 84-95; G. Ryle, "John Locke on the human understanding", in *Locke and Berkeley*, 14-39; St. Nathanson, "Locke's theory of ideas", in *Journal of the History of Philosophy* 11(1973), 29-42; D.E. Soles, "Locke on ideas, words, and knowledge", in *Revue internationale*

holding a representational view of the mind<sup>146</sup>. Similarly, he has been accused of giving contradictory accounts of the representational function of ideas<sup>147</sup>. Since the late 1950's, John Yolton has been pressing the need for a reinterpretation of the status and function of ideas in Locke. According to him, Lockean ideas should be seen as epistemic signs, not as representational entities. With this interpretation Yolton has sought to avoid the difficulties allegedly involved in representationalism, and to argue that Locke's position was in fact a form of direct realism<sup>148</sup>. Yolton's interpretation has been challenged, however, and remains controversial to this day<sup>149</sup>.

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*de philosophie* 42(1988), 150-172; 153; M. Ayers, *Locke*, vol. I: *Epistemology*, London-N.Y. 1991, Part One.

<sup>146</sup> See R. Jackson, "Locke's version of the doctrine of representative perception", in *Locke and Berkeley*, 125-154, on pp. 138-39; Aaron, *John Locke*, 91.

<sup>147</sup> G. Ryle, "John Locke on the human understanding", in *Locke and Berkeley*, 14-39, on pp. 21: the ideas are mere 'ghosts' of absent substances and qualities; and p. 23: "even if there did exist such things as 'ideas' were supposed to be, it is almost impossible to describe them as to make sense of the assertion that some of them 'resemble' or 'represent' realities."

<sup>148</sup> See J.W. Yolton, *John Locke and the Way of Ideas*, Oxford 1956; idem, *Locke and the Compass of Human Understanding*, 129-137; idem, "On being present to the mind: A sketch for the history of an idea", in *Dialogue* 14(1975), 373-388, on pp. 383-384; idem, "Ideas and knowledge in seventeenth-century philosophy", 159-162. See also D. Greenlee, "Locke's idea of 'idea'", in *Locke on Human Understanding*, 41-54, on p. 53; A.D. Woozley, "Some remarks on Locke's account of knowledge", in *Locke Newsletter* 3(1972), 7-17.

<sup>149</sup> R. McRae, "On being present to the mind: A reply", in *Dialogue* 14(1975), 664-66; Tipton, "Introduction", in *Locke on Human Understanding*, 6; R. Cummins, "Two troublesome claims about qualities in Locke's *Essay*", 415-17. According to A. Bax & R. Jorna, "Locke's *idea* en Yolton's *claim*: Een bijdrage tot de discussie over representationalisme en direct realisme in de cognitieve psychologie", in *Tijdschrift voor Filosofie* 48(1986), 479-493, Yolton attempts to protect Locke from ontologism, but he insufficiently distinguishes between the causal factors in perception and the semantic aspects of 'perceptual belief'. Moreover, he presumes a clearness of purpose that is not found in Locke himself; Yolton does not distinguish the pick up of information from its analysis, and therefore he does not explain how mental representations may be subjected to semantical analysis. M. Ayers, *Locke*, vol. I: *Epistemology*, 60-64, argues that Yolton's interpretation is untenable, since ideas are produced in us like the sense data or raw feels of some 20th-century empiricism. Avoiding labels such as representationalism and direct realism, D.E. Soles, "Locke on ideas, words, and knowledge", p. 154, argues that Locke's ideas cannot be objects, since they are not substances, and defines on p. 155 Locke's position as 'first person, mental state foundationalism': "According to Locke, all knowledge is mediated by the occurrence of particular sorts of mental states or events, and ultimately our evidence for our claims about the world is the occurrence of those mental states (...)".

Locke's account of the generation of empirical knowledge, and in particular the position of ideas in it, raises a number of questions. Actual perception occurs when the brain is affected by motion. It also requires an attention of the mind, however<sup>150</sup>. Ideas are natural signs of properties of external bodies<sup>151</sup>. In this respect they point to something beyond themselves. Yet, they may also be regarded as the immediate objects of the mind<sup>152</sup>. The ontological status of ideas appears difficult to pinpoint. Ideas are real, and yet they are not substances. But are they accidents, then? Locke did not draw this conclusion, observing only that it seems probable that they are the effects of motion, since they are so fleeting<sup>153</sup>. To be in the understanding is to be understood<sup>154</sup>. Locke remarked that ideas are just actual perceptions in the mind, which cease to be when there is no perception of them<sup>155</sup>. On the other hand, however, in many passages he treated ideas as being images, pictures, or objects of understanding, which makes it improbable that they are just mental acts. They rather seem to be perceptions in the sense that they are the results or products of perceiving<sup>156</sup>.

For present purposes I only want to draw attention to two interrelated, problematic points. First, Locke's account of ideas is marked by a fundamental ambiguity, namely, between representations generated by external objects, (actual) perceptions, and mental contents. Locke failed to make a clear distinction between ideas as natural signs of external bodies, ideas as acts of perception or of understanding, and ideas as logical constituents of thought<sup>157</sup>. Secondly, Locke presumed the mind to be passive in the reception

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<sup>150</sup> *Essay*, II.ix.3 and 4; cf. II.ix. 8, for the concept-dependence of perception. See also Aaron, *John Locke*, 57-58: a mental act of 'noticing' is involved in the acquisition of all our simple ideas.

<sup>151</sup> Locke sometimes reverberated the ancient theory of indicative signs; cf. *Essay*, II.xxxi.2 and II.xxxii.14-16. For discussion, see Ayers, *Locke*, vol. I, 38-40.

<sup>152</sup> *Essay*, "Introduction", p. 14; cf. II.i.1 and 9; IV.i.1-2.

<sup>153</sup> *Remarks*, X, 256. Cf. the status of cognitive impressions in Stoic philosophy (ch. I, § 1.4.3), mental representation in Abelard (ch. II, § 1.1), species in Peter of Spain (ch. II, § 1.5), and ideal shadows or cognitive species in Bruno (ch. VIII, § 3.3).

<sup>154</sup> *Essay*, I.ii.5.

<sup>155</sup> *Essay*, II.x.2.

<sup>156</sup> See R. Hall, "Idea in Locke's works", in *Idea. VI Colloquio Internazionale del Lessico Intellettuale Europeo*, 255-263, on pp. 258-59.

<sup>157</sup> Cf. *Essay*, II.viii.8 (quoted above).

of simple ideas of sensation, which he sometimes also identified with simple apprehensions. Yet, he also held that the mind does not know until it attends to what it receives.

### 2.1.3. Empirical ideas and intelligible species

Locke had a causal theory of perception. His broad use of the term idea masked the transitions between reality, perception and thought. Ideas are effects in the mind pointing beyond themselves to reveal their causes.

The function of simple ideas may be compared to that of intelligible species, namely, insofar as they both establish a link between soul and reality. The relation between Scholastic psychology and Locke's theory of ideas has not really been studied in the literature so far<sup>158</sup>. In this subsection I want to take some steps toward filling this gap.

The human mind has accesses to sensible reality through the ideas received from sensation:

For since the Things, the Mind contemplates, are none of them, besides it self, present to the Understanding, 'tis necessary that something else, as a Sign or Representation of the thing it considers, should be present to it: And these are *Ideas*.<sup>159</sup>

If in this passage we substitute mind for intellectual soul, and ideas for intelligible species, we have an account very similar to Duns Scotus' argument for species as preceding the cognitive act<sup>160</sup>. Lockean ideas, like intelligible species, are sense-dependent representations mediating between the immaterial mind and the material world. As we have seen, there was a notable parallel between Locke's view of the production of simple ideas and the medieval theory of species multiplication. In a concise definition of ideas in *Essay*, I.i.8, Locke indeed suggested a link between his view and that of traditional psychologies:

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<sup>158</sup> For a first orientation, see E. Krakowski, *Les sources médiévales de la philosophie de Locke*, Paris 1915; Gibson, *Locke's Theory of Knowledge and Its Historical Relations*, ch. VIII: "Locke and Scholasticism"; J.R. Milton, "John Locke and the nominalist tradition", in *John Locke. Symposium Wolfenbüttel 1979*, ed. R. Brandt, Berlin-N.Y. 1981, 128-145.

<sup>159</sup> *Essay*, IV.xxi.4.

<sup>160</sup> Cf. ch. IV, § 1.1.

I have used it to express whatever is meant by *Phantasm*, *Notion*, *Species*, or whatever it is, which the Mind can be employ'd about in thinking.<sup>161</sup>

In the Aristotelian view, the term "phantasm" had stood for sensory representation. Also Hobbes and Gassendi had used it in this sense, but in different contexts. Locke must surely have had their use in mind here. The term "notion" was used by a number of Renaissance authors as the only reasonable interpretation of intelligible species, but it also recurred in Descartes, who linked it to idea and concept<sup>162</sup>. The term "species" was rejected by all modern philosophers except Gassendi<sup>163</sup>.

In the following comparison between Locke's theory of ideas and the traditional doctrine of (intelligible) species, I want to focus on the following two points: first, the generation of species and of ideas, and second, the relation between mental representation and content in intellective cognition.

Ideas of sensation are produced by insensible particles acting on the senses. In vision, for example, rays of light impinge on the retina and cause a chain of motions, which eventually results in the brain producing an idea in the mind.

Locke was well-aware of the fact that his view of sensible ideas resembled the older doctrine of species. Indeed, in his *Examination of P. Malebranche's Opinion*, he was anxious to point out that Malebranche's arguments against Peripatetic species did not apply to his theory of material rays of light consisting of extremely small particles causing sensation. Locke stated that it was not his business to defend what he did not understand, and that he liked neither the "gibberish of the schools" nor the unintelligible position of Malebranche.

Though I do not think any material species, carrying the resemblance of things by a continual flux from the body we perceive, bring the perception of them to our senses; yet I think the perception we have of bodies at distance from ours, may be accounted for,

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<sup>161</sup> *Essay*, p. 47.

<sup>162</sup> See ch. XI, § 1.2.1.

<sup>163</sup> Also Gassendi referred to a large number of traditional terms in his description of idea; see *Institutio logica*, 1-4, examined in ch. XI, § 3.2.2.



as far as we are capable of understanding it, by the motion of particles of matter coming from them and striking our organs.<sup>164</sup>

The Peripatetic doctrine of species was not at all satisfactory for Locke, but he still refuted the first series of objections raised by Malebranche against the species, arguing that material rays of light may convey visible species into the eye<sup>165</sup>. To Malebranche's second objection, concerning the change of size in the ideas of visible objects, Locke replied that it is indeed a good argument against the species as understood by the Peripatetics, but that it ceases to be so if we assume that we see the figures of objects at the bottom of our eyes. Also the other objections raised by Malebranche are similarly ineffective against visual species understood as material rays of light<sup>166</sup>.

Locke granted the validity of Malebranche's arguments for traditionally conceived Peripatetic species, but not for his own view of the origin of ideas<sup>167</sup>. Locke did not specify in any detail how, according to him, the Peripatetics understood the species. From his discussion of Malebranche's objections it is clear, however, that his reservations regarding traditional species were not so much based on the historical versions of it, but rather on the caricature drawn by Descartes and Malebranche. Conversely, Locke's own view of material rays impinging on the sense organs and triggering the generation of simple ideas was remarkably similar to the doctrine of sensible intentions and species as devel-

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<sup>164</sup> See *Examination*, 215. For discussion of the relation between Locke and Malebranche, see H.E. Matthews, "Locke, Malebranche and the representative theory", 55-61; Ch.J. McCracken, *Malebranche and British Philosophy*, 144-45.

<sup>165</sup> *Examination*, 215-17; for an analysis of Malebranche's objections, see above, § 1.1.2. As regards the first series of objections: if we allow the particles of light to be extremely small and swift, and accept the porosity of the medium, then the arguments based on the impenetrability of bodies and on the mutual interference of the rays, can be answered easily. Also the argument that we can see a multitude of objects from a single point is invalid, because the bottom of the eye is not a point. Moreover, sight is not achieved at one point.

<sup>166</sup> *Examination*, 217-18.

<sup>167</sup> *Examination*, 218: "since my principles have been said to be conformable to the Aristotelian philosophy, I have endeavoured to remove the difficulties it is charged with, as far as my opinion is concerned in them." See also Duchesneau, *L'empirisme de Locke*, 229. Also Gassendi, who endorsed the species in the context of a materialist psychology, rejected the Peripatetic species; cf. ch. XI, § 3.2.1.

oped by Alhazen and by Roger Bacon. Let me discuss these authors in some more detail now.

It had been Alhazen's view that vision is produced by rays or powers, called "forms" or "intentions", which issue perpendicularly from all points of the perceived object, and which enter into the percipient eye<sup>168</sup>. This view incorporated a central feature of the Greek theory of the *eidola*<sup>169</sup>. Seeing, however, takes more than just the imprinting of a form emanating from the object on the sensory organ and faculty. In most cases, it also involves a complex judgment based on the information received from the object<sup>170</sup>; the only exception is the perception of mere light and colour, which is achieved by the senses alone without the action of capacities traditionally seen as superior to sense<sup>171</sup>. In more modern terms, we may say that sense perception is not encapsulated, but relatively penetrable by intellectual knowledge.

For the explanation of all knowledge that is based on perception, Roger Bacon worked out a comprehensive doctrine of the "multiplication of species"<sup>172</sup>, based on the central claim that all natural causation occurs by emanation, the paradigm of which is the propagation of light<sup>173</sup>. The central meaning of "species" for

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<sup>168</sup> *Opticae thesaurus*, Basileae 1572 (reprint ed. D.C. Lindberg, New York 1972), p. 7.

<sup>169</sup> There were also significant differences, however, since rays are just powers producing qualitative changes in the percipient, and not corporeal replicae. Lacking the ontological 'thickness' of Epicurus' *eidola*, they seem more fit for a geometrical treatment in terms of points and lines. Cf. D.C. Lindberg, "Alhazen's theory of vision and its reception in the West", *Isis* 58(1967), 321-341, on pp. 332-35. For Democritus' and Epicurus' concepts of *eidola*, see ch. I, § 1.1 and 1.4.1.

<sup>170</sup> *Opticae thesaurus*, p. 31, where Alhazen distinguished between vision "solo sensu", "per cognitionem", and "ratione & distinctione"; on p. 30, Alhazen in fact remarked that "comprehensio", "comparatio", "distinctio", and "ratio" play a role in the act of vision. See also pp. 38-39. For discussion, see A.I. Sabra, "Sensation and inference in Alhazen's theory of visual perception", in *Studies in Perception*, eds. P.K. Machamer and R.G. Turnbull, Columbus (Ohio) 1978, 160-185.

<sup>171</sup> *Opticae thesaurus*, p. 34.

<sup>172</sup> For extensive analysis, see D.C. Lindberg, *Rogers Bacon's Philosophy of Nature*, Oxford 1983, liii-lxxi.

<sup>173</sup> Cf. *Opus maius*, ed. J. Bridges, 3 vols., London 1900, pars V, vol. II, 52.

Bacon was “*primus effectus agentis*”<sup>174</sup>. Bacon endowed the species with all the optical properties possessed by Alhazen’s form or intention. Like his Arab master, he did not think of them as bodies<sup>175</sup>, yet he believed that they are material in the same manner as luminous rays<sup>176</sup>. Although Bacon hypothesized the existence of species for each of the senses<sup>177</sup>, his main interest lay with the process of vision. The visible object generates or ‘multiplies’ species of light in the transparent medium<sup>178</sup>. The multiplication of visible species proceeds in all directions through the medium until they reach the viewer where they are ‘impressed’ on the viewer’s eyes. Once they have been received in the sense organ, the species are again multiplied along the optic nerves to the internal senses<sup>179</sup>. The latter then complete the process of apprehending sensible objects<sup>180</sup>. For Bacon the conformity and likeness between species and things was not an empirical claim; he just took it for granted that species agree with reality. It is by virtue of this postulate that we can immediately infer from received species to knowledge of things<sup>181</sup>.

Locke’s account of the physical processes underlying the generation of simple ideas of sensation can in many ways be read as a mechanistic reinterpretation of Alhazen’s optics and of Bacon’s doctrine of (sensible) species. There were also important differences between them, however. According to these medieval authors, the species and intentions produced by the light in the medium, in the sense organs, and in the senses were the effects of a chain of successive actualizations of the potentialities of the various media involved, a form of propagation like that of a wave. Locke interpreted sensation in terms of motion, and thought of the impressions on the eyes as the mechanical effects of light rays.

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<sup>174</sup> *De multiplicatione specierum*, in D.C. Lindberg, *Rogers Bacon’s Philosophy of Nature*, Oxford 1983, 6.

<sup>175</sup> Cf. *Opus maius*, pars V, 71-72.

<sup>176</sup> *Opus maius*, pars V, 40-41.

<sup>177</sup> See *Opus maius*, pars V, 72-73.

<sup>178</sup> Cf. *De multiplicatione specierum*, II.i, 90.

<sup>179</sup> *De multiplicatione specierum*, 6f.

<sup>180</sup> Cf. *Opus maius*, pars V, 8-9.

<sup>181</sup> See also *De signis*, eds. K.M. Fredborg, L. Nielsen and J. Pinborg, in *Traditio* 34(1978), 81-136, I.5, p. 83.

Moreover, where Alhazen and Bacon had seen the intentions and species as information-bearing entities that resemble their causes, Locke believed that only the ideas of primary qualities resemble the patterns that really exist in material things. Locke did not see the resemblance of simple ideas as being based in any sense on the specific way in which they are produced. All simple ideas are produced by combinations of causally efficient primary qualities. Ideas of primary qualities are resemblant because they capture the properties that the new physics takes as its theoretical basis.

According to Bacon, the species are multiplied up to the level of the inner senses. The immaterial intellectual soul cannot be touched by material entities or representations. Thomas Aquinas, and many other Scholastic and Peripatetic writers after him, had at this point endorsed the notion of intelligible species, which he supposed to be produced by the active mind in cooperation with sensory representations. Locke replaced the intelligible species as a mental representation by the simple idea of sensation. He presumed the patterns and motions in the brain to be responsible for the generation of ideas, but he professed his own ignorance as to the nature of this process, declaring the generation of ideas, caused by physical motion but realized in an immaterial medium, to be grounded in the will of God<sup>182</sup>. As we have seen above, Locke suggested that motion may serve as a link between matter and mind<sup>183</sup>, but then there still remains a profound theoretical gap between the motion of animal spirits and the generation of ideas in the mind.

On Locke's account, the mind does not actively contribute to the generation of simple ideas, but just passively receives them. Yet, this generation does not automatically lead to perception, which in addition requires that the mind pays attention to the ideas. Unlike the traditional theory of intelligible species, Locke's account entails a circularity on this point: only *conscious* thought and *conscious* experience are marked by intentionality. Actual cognition is based on the mind's attention, rather than on the tokening of representations that are themselves unknown and that

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<sup>182</sup> *Examination*, 217. See also *Essay*, IV.iii.28.

<sup>183</sup> Cf. subsection 2.1.1.

are produced by an unknowing intellect processing sensory information.

Like the traditional intelligible species, Lockean ideas are sense-dependent mental representations mediating between the mind and the external world. Since the mind is only passively involved in their production, so Locke seemed to argue, the mere presence of ideas is only a necessary, not a sufficient condition for actual knowledge. In actual perception the mind pays attention to what it receives. The requirement of attention implies that the idea as sign is transformed into a mental content. The idea through which the mind has representational access to sensible quality is turned into a kind of first (mental) object, from which the mind by inference may gain knowledge of its distal causes in the material world. Ideas insofar as attended to coincide with actual perception. Thus, Locke conflated mental representation, content, and act.

The blurring of the distinction between mental representation, content and act in Locke was fundamentally different from similar positions developed by his Peripatetic predecessors. Numerous writers of the Middle Ages and of the Renaissance who were critical of the species doctrine had identified the intelligible species with the mental act<sup>184</sup>. Other philosophers had endorsed a view of the species as being the end result of cognition, that is, as the content that remains in memory<sup>185</sup>. During the Renaissance, Fracastoro and Zabarella, although they accepted the doctrine of intelligible species, had argued that empirical knowledge requires the attention of the mind<sup>186</sup>. Unlike these authors, and also unlike Descartes, Locke assigned no causal role to the mind in the production of primary mental representations<sup>187</sup>. Lockean ideas are the product of motions in the animal spirits, unconditioned by the active features of the mind. In this sense, Locke's position most re-

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<sup>184</sup> For example, Godfrey of Fontaines (ch. III, § 3.3), John Baconthorpe (ch. IV, § 2.2), and Alessandro Achillini (ch. VI, § 2.2). For a brief survey of this position and its possible relation to the view of Amauld, see above, § 1.4.

<sup>185</sup> See Olivi (ch. III, § 3.4), Gregory of Rimini (ch. IV, § 3.4), and Peter of Ailly (ch. V, § 1.1).

<sup>186</sup> Cf. ch. VI, § 1.5, and ch. IX, § 1.1.

<sup>187</sup> Notice that Olivi and Suarez argued for a crucial role of the mind's attention in the generation of primary cognition (simple apprehension); cf. ch. III, § 3.4 and ch. X, § 1.6. In contrast to Locke, however, their arguments were directed against the alleged passivity of the mind.

sembled Buridan's view of intelligible species as generated by, and essentially identical with, sensory representations<sup>188</sup>.

## 2.2. *An early disciple of Locke: Richard Burthogge*

Locke's view of the role of ideas in knowledge acquisition were worked into a more pronounced form of representationalism by one of his early disciples, Richard Burthogge<sup>189</sup>. Like Locke, Burthogge argued that all of human knowledge is based on sensory experience. His cognitive psychology differed from Locke's on two points, however. In the first place, ideas are not generated by motions of the animal spirits, but they are rather occasioned by sense-experience. Secondly, the direct objects of knowledge are phenomenal.

Burthogge gave a comprehensive account of his epistemology in the *Organum Vetus & Novum*. Things are known only insofar as they are present in the mind:

So that all the immediate Objects of Humane Cogitation (to use the word in its largest sense) are *Entia Cogitationis*, All *Appearances*; which are not *properly* and (may I use a Schoolterm) *formally* in the things themselves (...).<sup>190</sup>

The cognitive objects are mental entities, also described as "noemata" and "conceptions", endowed with an objective existence. Formally, notions exist only in the mind; they arise on the occasion of sense-impressions<sup>191</sup>.

In his later work, *An Essay Upon Reason, and the Nature of Spirits*, Burthogge developed his views in some more detail. There are three cognitive faculties, namely, sense, imagination, and rea-

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<sup>188</sup> See Buridan's final *De anima* commentary, examined in ch. IV, § 3.2. A similar position is found in early 17th-century Dutch authors; see ch. XII, § 1.1.1-2, and 1.2.1, for Burgersdijk, Sennert and Heereboord.

<sup>189</sup> Richard Burthogge, 1638—1694; for bio-bibliographical data, see Richard Burthogge, *The Philosophical Writings*, ed. M.W. Landes, Chicago-London 1921, xi-xii. For discussion, see Th. Lennon, *The Battle of the Gods and the Giants. The Legacies of Descartes and Gassendi, 1655-1715*, 187-190.

<sup>190</sup> *Organum Vetus & Novum or, A Discourse of Reason and Truth*, London 1678, in *Philosophical Writings*, p. 12.

<sup>191</sup> *Organum Vetus & Novum*, 13-19; for discussion, see Yolton, *Perceptual Acquaintance*, 106-107. For the background of the distinction between "formal" and "objective" existence, see, *inter alia*, ch. IV, § 1.5, ch. VII, § 2.1, ch. X, § 1, *passim*, and ch. XI, § 1.2.2.

son. These are all conceptive, that is, they are mental and spiritual instead of being merely mechanical and material powers. Burthogge distinguished between conception and knowledge or apprehension. Conception is caused by sensory affections, and consists in a modification of the mind (an image or an idea). Conceptions may give rise to knowledge, that is, to conscious perception or apprehension<sup>192</sup>. The mind's attention plays a crucial role in the genesis of knowledge:

And those Images being but Modifications of Mind, arise not in us upon any Impressions but when the Mind attends to them, for else they cannot affect it.<sup>193</sup>

Without mental attention there can be no conception, and by consequence also no conscious knowledge. In conception, the mind produces the vehicles of conscious perception and of knowledge, namely, images and ideas. Like the Peripatetic tradition, Burthogge distinguished between simple apprehension and discursive reasoning<sup>194</sup>.

In ch. III Burthogge distinguished two meanings of "notion": generally speaking, "notion" stands for any conception or thought, while in a more technical sense it is a "modus concipiendi":

A manner of conceiving things that corresponds not to them but only as they are *Objects*, not as they are *Things*.<sup>195</sup>

The mind has knowledge of things only through notions. Things do not formally exist in the mind, nor by way of true resemblances or representations, but only as "appearances"<sup>196</sup>. The human mind does not have direct perceptual contact with corporeal reality. The mind can grasp external reality only through images

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<sup>192</sup> *An Essay Upon Reason, and the Nature of Spirits*, London 1694; I refer to the reprint of London-N.Y. 1976. This work is also reprinted in the *Philosophical Writings*.

<sup>193</sup> *An Essay Upon Reason*, 4-7.

<sup>194</sup> See *An Essay Upon Reason*, 24: "First, it may think upon them nakedly and abstractly, as they are in themselves, (without considering them as marked and distinguished by Words, or any Characters and Notes, that should betoken or signify them) only by having the *Idea* or notion of them."

<sup>195</sup> *An Essay Upon Reason*, 54; cf. p. 77-79: notions are intentional beings.

<sup>196</sup> *An Essay Upon Reason*, 59.

and ideas. This entails that the immediate objects of cognition are “*entia cogitationis*” or appearances<sup>197</sup>.

Burthogge was a great admirer of Locke, and dedicated to him his *Essay Upon Reason*. Yet, Burthogge’s position departed from that of his master in significant ways. His view of the mind was linked up with traditional notions such as the “mosaical spirit” and the “Pythagorean world-soul”<sup>198</sup>. Moreover, he rejected any direct causal impact of the material world on the mind; as he saw it, ideas and notions arise in the mind on the *occasion* of impressions on the sense organs. Burthogge eliminated a fundamental ambiguity in Locke’s philosophy of ideas, namely, that between idea as representation and idea as content or object. Ideas are the immediate objects of cognition, while external objects are grasped only by inference. In this respect, Burthogge’s position resembled that of Gassendi. Things are not perceived as they are in themselves, but only as they appear to us through the images and notions they excite in us. Perception, cognition, and science deal with a phenomenal world of appearances. Therefore, we can have no certain knowledge of external things, but only various degrees of probable knowledge<sup>199</sup>.

### 2.3. *Locke’s first critics*

#### 2.3.1 John Norris and Henry Lee

As soon as it was published, Locke’s *Essay* was attacked by numerous authors who criticized the new way of ideas proclaimed therein from various points of view<sup>200</sup>.

John Norris followed Malebranche and endorsed the latter’s conception of the vision in God<sup>201</sup>. He shared part of Locke’s re-

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<sup>197</sup> *An Essay Upon Reason*, 60-61. Cf. also Hobbes’ notion of appearance (ch. XI, § 2.2-3).

<sup>198</sup> See also *An Essay Upon Reason*, 123-125 and 149-155. Notice that McCracken, *Malebranche and British Philosophy*, 11, sees Burthogge as a Platonist.

<sup>199</sup> *An Essay Upon Reason*, 66-74.

<sup>200</sup> For discussion, see Yolton, *John Locke and the Way of Ideas*, ch. I-III.

<sup>201</sup> John Norris, *Cursory Reflections upon a Book call’d an Essay concerning Human Understanding*, London 1690 (published together with *Christian Blessedness*). See also *An Essay Towards the Theory of the Ideal or Intelligible World*, 2



jection of nativism, but not his view of ideas. Ideas deal with the “Divine *lógos*” or “Ideal world”, an idea being the “omniiform essence of God partially represented”<sup>202</sup>. Norris’ critique of Locke focused on the notion of idea, conceived as a mental impression that is causally dependent on material things. Norris questioned Locke’s presumption that nothing can be impressed upon the mind without being noticed<sup>203</sup>. He noticed a similarity between Locke’s notion of idea and the Peripatetic view of ideas as emanated from sensible objects, and he argued that Malebranche’s critique of the species equally applies to Locke’s notion of mental impression<sup>204</sup>. This point returned in his *Essay Towards the Theory of the Ideal or Intelligible World*<sup>205</sup>, where Norris repeated Malebranche’s critique of the species<sup>206</sup>. He also pointed out that Locke’s theory cannot explain the true (ontological) nature of ideas. They cannot be corpuscular effluences, because such corpuscles cannot represent immaterial objects, nor can they be unbodily substances, for their causes are corporeal. Norris remarked that some authors relied on the action of an agent intellect to spiritualize material phantasms, but he did not think that Locke’s philosophy had room for this kind of “Romantick Transsubstantiation”<sup>207</sup>. In his *Essay*

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vols., London 1701-1704. For Malebranche’s fortune in Great Britain, see Pacchi, *Cartesio in Inghilterra*, 194f, and, for discussion of Norris, pp. 165, 193, and 197-218; McCracken, *Malebranche and British Philosophy*, in particular, pp. 3 and 174f on Norris. For discussion of Norris, see also Yolton, *John Locke and the Way of Ideas*, 72, and 91-95; idem, *Perceptual Acquaintance*, 108.

<sup>202</sup> *Cursory Reflections*, 20 and 31. See also *An Essay Towards the Theory of the Ideal or Intelligible World*, vol. I, 107-108, where both ideas and species are regarded as the object of knowledge.

<sup>203</sup> *Cursory Reflections*, 6-10.

<sup>204</sup> *Cursory Reflections*, 24-26. See also *An Essay Towards the Theory of the Ideal or Intelligible World*, vol. I, 105-106 for a critique of the Scholastic view of mediating representations or similitudes.

<sup>205</sup> *An Essay Towards the Theory of the Ideal or Intelligible World*, vol. II, p. 329, ch. VII “That the Ideas whereby we perceive such Objects as are mediately Intelligible, do not come from those Objects; with some occasional Considerations upon the *Intellectus Agens* of the Schools, Mr. *Lock*’s Principle of Sensation, and that Scholastick Maxim, That there is nothing in the Understanding but what was first in the Sense.”

<sup>206</sup> *An Essay Towards the Theory of the Ideal or Intelligible World*, vol. II, 330-345.

<sup>207</sup> *Cursory Reflections*, 26. Notice that the term “spiritualizare” was already used by John Ponce with respect to the operation of the agent intellect regarding the corporeal object. However, Ponce emphasized that this ‘spiritualization’ consists merely in the production of a mental representation; cf. ch. X, § 3.5.1 and

of the *Ideal World*, Norris argued in more detail against the Peripatetic doctrine of the agent intellect<sup>208</sup>. Locke wrote various replies to Norris' criticisms<sup>209</sup>.

Henry Lee tried to show that Locke's notion of ideas leads to a fundamental scepticism about the external world<sup>210</sup>. Lee accepted the claim that ideas are generated by bodies through the motions these bodies cause in the nerves and in the spirits<sup>211</sup>, but he took exception to Locke's view that sensation is a reliable source of knowledge. Locke confused perception and (incoming) ideas. If sensory impressions were indeed received in a purely passive way, then the mind would be just a 'looking glass' or a 'piece of wax'<sup>212</sup>. Lee, by contrast, argued that perception is a voluntary act of the mind, distinct from motion. The soul has a "natural aptness" for perception and for knowledge. Knowledge arises from a rational discrimination and analysis of sensory information or ideas<sup>213</sup>.

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*Integer Philosophiae cursus*, 476a. For a similar misconception, see Maignan (ch. XII, § 3.1) and Malebranche (§ 1.1.2).

<sup>208</sup> See *An Essay Towards the Theory of the Ideal or Intelligible World*, vol. II, 348-354, where Norris qualified Aristotle's agent intellect as "hocus pocus". The "spiritualization" of material species is an extravagant supposition: (1) we are not conscious of any agent intellect; (2) intellection is an immanent, not a transient activity; (3) it is against the nature of understanding that the mind should process any material objects; (4) after the "intellectual purgatory" the intelligible species would still be a (spiritual) accident, and thus be useless for making other things known.

<sup>209</sup> His first reaction was rather sarcastical; see R. Acworth, "Locke's first reply to John Norris", in *Locke Newsletter* 2(1971), 7-11. Subsequently, he submitted the vision in God to a critical examination; see *Remarks upon some of Mr. Norris's books*. For discussion of the polemics between Locke and Norris, see C. Johnston, "Locke's Examination of Malebranche and John Norris", in *Journal of the History of Ideas* 19(1958), 551-58; McCracken, *Malebranche and British Philosophy*, 119-132.

<sup>210</sup> See Henry Lee, *Anti-Scepticism: or, Notes Upon each Chapter of Mr. Locke's Essay concerning Humane Understanding*, London 1702, "Preface" (unnumbered pages). In the "Preface", Lee challenged the existence of both simple and abstract ideas in Locke. The concept of simple idea is an abstraction, since the idea of the sun, for example, cannot be conceived in isolation from the idea of light; cf. 48-49.

<sup>211</sup> *Anti-Scepticism*, 55.

<sup>212</sup> *Anti-Scepticism*, 55-56, and 40-44. For discussion, see Yolton, *John Locke and the Ways of Ideas*, 73; cf. also pp. 87, and 101-102.

<sup>213</sup> See *Anti-Scepticism*, "Preface", and pp. 41, 49, and 58-59.

## 2.3.2. John Sergeant

A genuinely Aristotelian critique of Locke's view of ideas was given by John Sergeant<sup>214</sup>. In his *Solid Philosophy Asserted*<sup>215</sup>, Sergeant presented Aristotle as the "great Speculator and Observer of Nature"<sup>216</sup>, and he also declared his great admiration for Thomas Aquinas<sup>217</sup>. Like his master Thomas White, Sergeant combined a naturalistic outlook in epistemology with continuous allusions to the field of theology. It was his view that God has imprinted truth on all created beings, and on this truth all science is based<sup>218</sup>. According to Sergeant, in the centuries after the death of Aquinas the "Nature-taught method" had been greatly neglected and the true sense of Aristotle's philosophy had been lost. In this climate of confusion arose the "ideist" philosophies of Descartes and Locke, which were fundamentally unable to explain how corporeal natures might be conveyed into the mind, and which were thus led to introduce ideas as mental replacements (resemblances or similitudes) for the things themselves<sup>219</sup>. These ideas, also described as "glassy essences", are mere fancies, and they cannot serve as the basis for knowledge or truth. Knowledge and truth

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<sup>214</sup> John Sergeant, 1622—1707; for discussion, see J.W. Yolton, "Locke's marginal replies to John Sergeant", in *Journal of the History of Ideas* 12(1951), 528-559, in particular, pp. 546-555; idem, *John Locke and the Way of Ideas*, 73, 103-114; idem, "Ideas and knowledge", 158-159; A. Pacchi, *Cartesio in Inghilterra*, 109, 150 and 159; Ch.J. McCracken, *Malebranche and British Philosophy*, 10; R. Glauser, "John Sergeant's argument against Descartes and the way of ideas", in *Monist* 71(1988), 585-595 (see note 2 for bio-bibliographical information); D. Krook, *John Sergeant and His Circle. A Study of Three Seventeenth-Century English Aristotelians*, ed. B.C. Southgate, Leiden 1993, 1-11 (for biographical information), and ch.'s V-VIII (in particular ch. VII, devoted to Sergeant's criticisms of Locke).

<sup>215</sup> John Sergeant, *Solid Philosophy Asserted, Against the Fancies of the Ideists: or, The Method to Science Farther Illustrated. With Reflexions on Mr. Locke's Essay concerning Human Understanding*, London 1697. I have consulted the reprint (New York 1984) made from a copy once owned by John Locke, and now in the library of St. John's College, Cambridge.

<sup>216</sup> *Solid Philosophy*, 53; cf. p. 27.

<sup>217</sup> *Solid Philosophy*, A3r.

<sup>218</sup> *Solid Philosophy*, A2r. Cf. p. 40: the things exist as archetypes in God before they are created; thus, they have a natural and an intellectual manner of existence.

<sup>219</sup> The interpretation of idea as similitude was challenged by Locke on several occasions in the marginal notes to his copy of *Solid Philosophy*; cf., for example, pp. A4v, 23 and 137.

must be based on the things themselves, that is, on solid natural notions<sup>220</sup>.

Sergeant agreed with Locke on the following points: (1) observation deals with material objects or mental operations; (2) thought depends on sensory impressions; (3) the mind is fit to receive these impressions, and it is passive in receiving them<sup>221</sup>. Where Locke claimed that we can have direct knowledge of things through ideas, Sergeant thought that this is self-contradictory. He rejected the Lockean way of ideas because it put up a veil between the mind and its objects. The essence of knowledge lies in things being in the mind, and not in our having ideas that resemble something else<sup>222</sup>. According to Sergeant, the term "notion" stands for the things themselves existing in the mind. In this sense, notions are the objects by which the cognitive power is determined. Also identified as meanings, simple apprehensions or conceptions<sup>223</sup>, notions *directly* relate the mind to external things, or as Sergeant put it, "they express distinctly solid materials"<sup>224</sup>.

Sergeant took exception to Locke's definition of the idea as "phantasm, notion, and species", because he thought it blurred the distinction between man and animal, and that between mind and body<sup>225</sup>. Man being composed of body and mind, for each cognitive act there are two inner objects, namely, the material phantasm and the notion, which are grasped by the imagination and by the mind, respectively<sup>226</sup>. Phantasms are "effluviiums" emitted by external bodies and transmitted to the brain by the senses. They

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<sup>220</sup> *Solid Philosophy*, A4r-5v; cf. "Preface", a1r-b1r, and p. 317: philosophy is knowledge of things, not of ideas. In a marginal note on p. A4v, Locke observed that he did not conceive of the idea as a similitude.

<sup>221</sup> *Solid Philosophy*, 120.

<sup>222</sup> *Solid Philosophy*, b7r-8r, 29; cf. pp. 339-344. Sergeant rejected Locke's view on memory, however; cf. pp. 142-43.

<sup>223</sup> *Solid Philosophy*, b6r-v, and 33-34: notions are the meanings of the things themselves.

<sup>224</sup> *Solid Philosophy*, 24-27. See also p. 42: knowledge is based on notions, that is, on the very natures of things. Elsewhere, Sergeant remarked that abstract knowledge of the nature of things is grounded in distinct, partial notions, which make the things known to us under determinate respects; cf. pp. 47-48, 319, and 354.

<sup>225</sup> *Solid Philosophy*, 1-12; cf. p. 162 and 213-14. See also *Essay*, I.i.8, quoted above in § 2.1.3.

<sup>226</sup> *Solid Philosophy*, b5r-6r. Cf. p. 214: the sense impressions, as received by the material faculties, lead to sensation; as they proceed further, they generate notions.

should not be confused with notions, meanings or apprehensions, which belong to the realm of the mind<sup>227</sup>. Of Lockean ideas it is unclear whether they are corporeal or spiritual. This confusion makes science impossible<sup>228</sup>. The only reasonable interpretation of “idea” is that as essence or nature of things. And in this sense idea coincides with notion<sup>229</sup>.

Sergeant also raised other objections against ideas, comparable to those raised against the intelligible species by Ockham in the fourteenth century. If all knowledge were based on ideas, that is, on resemblances or picture-like entities, then we would of necessity first know the idea and then the represented object. But in reality pictures do not inform us about the actual existence of their representeds. Also, there is no guarantee that they perfectly resemble their representeds; so how could we ever recognize the objects represented, if not by dint of a prior and direct knowledge of the objects themselves? Moreover, reflexive knowledge based on ideas leads to an infinite regress: when we know a first idea acquired by impression, then we must also have an idea of that direct idea, and yet another idea when we know the reflexive idea, and so on *ad infinitum*<sup>230</sup>.

Sergeant observed that Aristotle had no satisfactory explanation of knowledge acquisition. It should therefore still be asked, “how all sorts of notions are bred in us”, or, in slightly different words, how local motions (the type of action characteristic of natural bodies) may be received in the soul<sup>231</sup>. Sergeant rejected both the Cartesian theory of innatism and the Scholastic doctrine of intentional species. His refutation of intentional species again clearly reverberated certain points from Ockham’s position. Both the el-

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<sup>227</sup> *Solid Philosophy*, 15. In his marginal notes to pp. 37-39, Locke questioned Sergeant’s interpretation of his philosophy: (1) in the *Essay* he regarded the idea as notion; (2) Sergeant presupposed that notions are likenesses, too; (3) Sergeant did not convincingly argue the distinction between phantasm and notion. For a critique of Sergeant, see also *Works*, IV, 390-91.

<sup>228</sup> *Solid Philosophy*, 22. Cf. p. 350-51: ideas may generate knowledge on condition that they are viewed as notions, that is, as things in the mind.

<sup>229</sup> *Solid Philosophy*, 41-42; cf. 350: ideas produce knowledge only when they are seen as notions.

<sup>230</sup> *Solid Philosophy*, 20-21; cf. pp. 31-32 and 340. For Ockham, see ch. IV, § 3.1.

<sup>231</sup> *Solid Philosophy*, 57-59.

der species and the new ideas are mere resemblances. If they are corporeal they cannot move the mind, but if they are spiritual it is difficult to see how they can be generated by the bodies. The appeal to an agent intellect for rendering intelligible the material species only multiplies the difficulties here. In the first place, it makes the argumentation circular, for (intelligible) species and agent intellect plainly presuppose one another<sup>232</sup>. Secondly, before they are processed the phantasms are either in the soul or not. If the first, it must be explained how; if the second, knowledge becomes a transient act, for it would then be the effect of an extrinsic cause<sup>233</sup>. Thirdly, an unknowing cognitive power is a contradiction in terms. Finally, if the species resemble the things they are notions, while, if they do not, they are redundant<sup>234</sup>.

As a preamble to his own solution of the generation of notions, Sergeant submitted a theological postulate, namely, that God has created man in such a manner that body and soul are mutually co-operative. To mental events there correspond corporeal events, and vice versa. The bodily correlates of notions are identified as effluences emitted by the bodies, penetrating the sense organs and the brain<sup>235</sup>. Sergeant rather surprisingly proposed that the Cartesian pineal gland plays a crucial role in the generation of notions. He defined the pineal gland as the most sensible and most tender or most noble part of matter. The pineal gland is the "corporeo-spiritual" junction where mind and matter may meet, and thus also the seat of knowledge:

Those *Effluviiums* sent out from Bodies, have the *very Natures* of those Bodies in them, or rather are themselves Lesser Bodies of the *Self-same* Nature, (as the smallest imperceptible parts of Bread and Flesh, are truly Bread and Flesh) which are cut off by Natural Agents from the Lump; and therefore, by Application of themselves, they imprint the *very Body it self*, or a Body of that Nature, on that material part which is the *Seat of Knowledge*. Whence the Soul being, at the same time, affected after *her* manner (or *Knowingly*) as that part was affected, she has also the *very Nature* of that Body

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<sup>232</sup> For a similar argument, cf. Durandus (ch. IV, § 2.1), and Lalemandet (ch. XII, § 2.5).

<sup>233</sup> *Solid Philosophy*, 29, 339-40: cognitive acts are immanent, they are received in what produces them.

<sup>234</sup> *Solid Philosophy*, 60-61.

<sup>235</sup> *Solid Philosophy*, 64-65.

(as far as the Sense exhibits it) put in her by that conformable Impression, when she has a *Notion* of it.<sup>236</sup>

These effluences, which contain the nature of things, “breed” notions in the soul<sup>237</sup>. These notions in their turn, as effects, partake in their causes, and thus they stand for the things themselves. The process of knowledge is reduced to a dyadic relation here, namely, that between mind and object. In this way Sergeant sought to defend a form of direct realism. The mind has access to the essences of things, because the latter exist in the mind in the form of notions. Yet, these notions are not directly produced by the things themselves, but depend on effluences or phantasms as causal intermediaries, which transmit accidental and essential features to the brain and to the mind, respectively. The physiological genesis of notions from phantasms was left fundamentally unexplained by Sergeant<sup>238</sup>.

Sergeant declined to see the notions as mere vehicles of knowledge for communicating the nature of external things to the observer. He unconditionally subscribed to Aristotle’s identity claim: actual knowing is identical with its object<sup>239</sup>. Yolton has compared Sergeant’s “notions” to Thomistic intelligible species<sup>240</sup>. Sergeant rejected the traditional species, however, arguing that they blurred the distinction between matter and mind. His theory of notions would rather seem to have been inspired by medieval and Renaissance criticism of the intelligible species. More to the point, Sergeant’s view of mental representation strongly resembled the position of Nifo and that of sixteenth-century Peripatetics who rejected the intelligible species as “tertium quid”, and who interpreted it as “notio”, that is, as the actual representation of an intelligible content<sup>241</sup>.

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<sup>236</sup> *Solid Philosophy*, 69.

<sup>237</sup> *Solid Philosophy*, 66-70; cf. p. 76. Elsewhere, Sergeant denied that knowledge is produced by motion, while he also rejected Locke’s account of secondary sensible qualities; cf. *Solid Philosophy*, 134-141, and 321.

<sup>238</sup> See also Locke’s sarcaistical comment to *Solid Philosophy*, p. 76; cf. Yolton, *John Locke and the Way of Ideas*, 106-107.

<sup>239</sup> Cf. *De anima*, 430a20 and 431b17-18.

<sup>240</sup> Yolton, “Ideas and knowledge”, 158.

<sup>241</sup> See, in particular, ch. VI, § 3.3 and ch. VII, § 3.2.

## § 3. LEIBNIZ: REPRESENTATION, PERCEPTION, AND IDEAS

The philosophy of Leibniz was different from that of the majority of early modern thinkers in its positive valuation of the philosophical tradition, including ancient philosophy and medieval Scholasticism as well as a number of Renaissance authors and later schoolmen<sup>242</sup>. Leibniz was by no means indiscriminate in his judgment of tradition. He praised the work of Plato, but Plotinus, Ficino, and Patrizi he despised for their mystification<sup>243</sup>. In an early letter Leibniz rejected Aristotle's *De caelo* and *De generatione & corruptione*, while he found *Physics*, *De anima*, and *Metaphysics* to contain much valuable material<sup>244</sup>. He later reconsidered this view of *De anima*<sup>245</sup>. Leibniz explicitly referred to his Scholastic education<sup>246</sup>, and he displayed a wide knowledge of the

<sup>242</sup> For overall valuations of the philosophical tradition, see, for example, *Nouveaux essais sur l'entendement humain*, I.i, 69-72, 77-78; *Die philosophischen Schriften*, ed. C.I. Gerhardt, 7 vols., Hildesheim 1965 (first edition: Berlin 1857-90), vol. VII, 153; this edition will be abbreviated as *GP* followed by the number of the volume. For a general discussion, see J. Moreau, "Tradition et modernité dans la pensée de Leibniz", in *Studia Leibnitiana* 4(1973), 48-60; Chr. Mercer, "The seventeenth-century debate between the Moderns and the Aristotelians: Leibniz and the Philosophia Reformata", in *Studia Leibnitiana*, suppl. XXVII, Wiesbaden 1990, 18-29; St. Brown, "Leibniz: Modern, Scholastic, or Renaissance philosopher?", in *The Rise of Modern Philosophy*, ed. T. Sorell, Oxford 1993, 213-230.

<sup>243</sup> Cf. *GP* I, 380; *GP* VII, 147-48. For discussion, see G. MacDonald Rose, "Leibniz and Renaissance Neoplatonism", in *Leibniz et la Renaissance*, ed. A. Heinekamp, Wiesbaden 1983, 126-130. For Leibniz and the tradition of a "philosophia perennis", see R. Meyer, "Leibniz und die Philosophia Perennis", in *Tradition und Kritik*, Stuttgart 1967, 237-249; Ch.B. Schmitt, "Perennial philosophy from Agostino Steuco to Leibniz", in *Journal of the History of Ideas* 27(1966), 505-532, on pp. 506, and 530-31.

<sup>244</sup> *GP* I, 196: "In libris octo Physicae generalis pariter ac libris de anima et Metaphysicis multa non spernenda esse puto." See also *GP* IV, 247. For discussion, see A. Robinet, "Leibniz: avec, autrement et sans Aristote", in *Penser avec Aristote*, ed. M.A. Sinaceur, Toulouse 1991, 325-340.

<sup>245</sup> *GP* VII, 151: "Quae de anima relinquit, plus habet subtilitatis, addo et plusculum veritatis, obscuriora tamen et minus plena atque absoluta videntur". Leibniz rejected Aristotle's view of an agent intellect (*ibidem*), in particular, as interpreted by his Italian Renaissance followers; cf. *GP* II, 117. See also *GP* VI, 529-30, and 545; and *Discours de Métaphysique*, ed. H. Lestienne, Paris 1986, § 28. In *GP* VII, 149, Leibniz observed that he (still) appreciated Aristotle's ethics, rhetorics, politics, and logic.

<sup>246</sup> See *GP* VII, 324, where Leibniz also observed that Scholastic philosophy in his days was practised only in monasteries.



Scholastic tradition<sup>247</sup>. Moreover, he was probably also acquainted with the views of many Renaissance philosophers<sup>248</sup>.

To be sure, Leibniz was certainly critical of Peripatetic psychology. Unlike many of his contemporaries, however, he did not dismiss Scholastic philosophy as a whole. In this context he criticized Descartes, for example, for not acknowledging his indebtedness to Plato, Aristotle, the School, and other authors<sup>249</sup>. Leibniz defended Aristotle against unjustified attacks<sup>250</sup>, and he argued for a re-evaluation of the Scholastic heritage<sup>251</sup>. This certainly justifies a comparison between the views of perception and of sensory knowledge in Leibniz and in traditional Peripatetic psychology. I first discuss Leibniz's rejection of the species doctrine and his alternative doctrine of perception. Subsection 2 deals with his view of ideas, while the final subsection explores some possible relations between Leibniz and Peripatetic psychology.

### 3.1. *Perception, species, and pre-established harmony*

Leibniz's view of perception was intimately linked up with his doctrine of a pre-established harmony between corporeal reality and the spiritual realm, and also with the monadology developed in his later works. Leibniz saw the human mind as an individual

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<sup>247</sup> See *Dissertatio Metaphysica de Principio Individui*, in *GP* IV, 17-18, where he cited, among others, Thomas, Duns Scotus, Capreolus, Gregory of Rimini, Gabriel Biel, Durandus, Murcia, and Suarez; on p. 22, he refers to Eustachius and Caietanus. In *GP* VII, 323, he mentioned Thomas, Bonaventure, and Gregory of Rimini. He was acquainted with Froidmont; see *Nouveaux essais*, 225. For discussion, see P. Petersen, *Geschichte der Aristotelischen Philosophie im Protestantischen Deutschland*, Stuttgart-Bad Cannstatt 1964 (2nd ed.), 340; A. Robinet, "Suarez im Werk von Leibniz", in *Studia Leibnitiana* 13(1981), 76-96.

<sup>248</sup> In *GP* IV, 18, Leibniz mentioned Zimara; see pp. 26 and 70, for Scaliger; see p. 155, for Nifo, Piccolomini, Zimara, Zabarella, and Vimercato; on p. 163, he referred to Patrizi, Telesio, Campanella, Fracastoro, and Cardano. See also *GP* VII, 53, for Cardano and Campanella; p. 67, for Patrizi, Telesio, and Campanella; on p. 365, he cited Rudolph Goclenius' philosophical lexicon. Finally, in *Textes inédits d'après les manuscrits de la Bibliothèque provinciale de Hanovre*, ed. G. Grua, 2 vols., Paris 1948, p. 548, he mentioned Cardano and Campanella. For discussion, see the studies published in *Leibniz et la Renaissance*, in particular, G. Utermöhler, "Die Literatur der Renaissance und des Humanismus in Leibniz's privaten Büchersammlung", 221-238, and E. Naert, "Leibniz et Pomponazzi", 135-142.

<sup>249</sup> *GP* I, 198; see, in particular, *GP* IV, 310-11.

<sup>250</sup> *GP* IV, 156 and 247.

<sup>251</sup> *GP* IV, 471-72.

substance or as a “windowless” monad, in which perception is developed from within on the basis of intrinsic, dynamic dispositions. No sense-dependent species can penetrate the mind<sup>252</sup>, the only conceivable sort of species being that which is received by the sense organs<sup>253</sup>. Leibniz explicitly rejected Hobbes’ theory of perception<sup>254</sup>, Descartes’ theory of mind-body interaction in the pineal gland<sup>255</sup>, the theory of occasionalism<sup>256</sup>, Spinoza’s monism<sup>257</sup>, and Locke’s conception of the mind as a “tabula rasa”<sup>258</sup>.

The essence of perception lies in the fact that there is a pre-established harmony. Perceptual knowledge of material reality is possible by virtue of a mutual correspondence between mind and body<sup>259</sup>. The perceptions of the soul correspond to states of the body, and more specifically to states of the brain<sup>260</sup>. Leibniz qualified the relation between soul and body as being “spontanea”: there is a “concomitance” between psychological and corporeal

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<sup>252</sup> See *GP* IV, 483-84, 496-99, 531, 533-34, and 573; cf. *GP* VII, 340, where he also attacked Empedocles, Galen, and Telesio; *Discours de Métaphysique*, § 26-28; *Monadologie*, in G.W. Leibniz, *Vernunftprinzipien der Natur und der Gnade. Monadologie*, ed. H. Herring, Hamburg 1956, § 7; *Nouveaux essais*, “Préface”, 48-49.

<sup>253</sup> *Nouveaux essais*, III.x.14: “Mais les especes intentionelles, qui doivent faire le commerce de l’âme et du corps, ne le sont pas, quoi qu’on puisse excuser peut être les especes sensibles, qui vont de l’objet à l’organe éloigné, en y sous entendant la propagation des mouvemens.” For similar positions, see Maignan and De la Forge, examined in ch. XII, § 3.1 and 2, respectively.

<sup>254</sup> *GP* I, 85: sensation (“sensio”) cannot be explained exclusively in terms of bodily motion.

<sup>255</sup> *GP* I, 335; *GP* II, 113; *Nouveaux essais*, 221-23.

<sup>256</sup> *GP* I, 382-83; *GP* II, 90f; *GP* IV, 483-4, 593; *GP* VII, 313. It is likely, however, that Leibniz’s doctrine of a pre-established harmony was also inspired by Malebranche; cf. St. Brown, “Malebranche’s occasionalism and Leibniz’s pre-established harmony: An ‘easy crossing’ or an unbridgeable gap?”, in *Nicolas Malebranche. His Philosophical Critics and Successors*, 81-93. Leibniz followed the dispute between Malebranche and Arnauld; cf. *Discours de Métaphysique*, § 8-10; A. Robinet, *Malebranche et Leibniz*, 133f.

<sup>257</sup> *GP* II, 133; *GP* III, 574-75.

<sup>258</sup> *Nouveaux essais*, IV.iii, 382: Locke’s view was similar to the Scholastic doctrine of the nude faculties. See also *Nouveaux essais*, “Préface”, *passim*, and I.i, 70f, where Leibniz suggested that Locke, like Gassendi and Campanella, believed that thought can be ascribed to matter.

<sup>259</sup> *GP* II, 115; *GP* IV, 483-84, *GP* VII, 313, 357.

<sup>260</sup> See *GP* I, 382-83; *GP* II, 91; *Nouveaux essais*, 115-16, and 145.

events, but the two orders are ruled by different laws and they are unable to influence one another<sup>261</sup>.

The human mind as an individual substance contains all possible ideas or representations within itself, although only part of them are actually thought of<sup>262</sup>. According to Leibniz, this means that the human soul perceives material bodies as “phenomena” rather than as extra-mental substances<sup>263</sup>. The mind expresses or mirrors the world at a phenomenal level: the phenomena that constitute perceptions inhere in the spiritual substance<sup>264</sup>. The perception of bodies by an individual created substance is more or less confused, because only some of the phenomena are “bene fundata”<sup>265</sup>.

What was Leibniz’s alternative to the Peripatetic theory that the cognitive act grasps corporeal objects through intelligible species? Leibniz distinguished between unconscious perceptions<sup>266</sup> and con-

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<sup>261</sup> *GP* I, 91-94. Cf. *GP* VII, 317, for the distinction between “lex perceptionis” and “lex motus”; see also p. 529.

<sup>262</sup> See subsection 3.2.

<sup>263</sup> *GP* II, 262: “Itaque sic sentio, corpora quae vulgo pro substantiis habentur, non nisi phaenomena esse realia nec magis substantias esse quam parhelia vel irides, nec tactu magis quam visu aliud evinci: Monada solam esse substantiam, corpus substantias, non substantiam”.

<sup>264</sup> See *GP* VII, 320: (external) reality is a series of perceptions; thus, the existence of the external world is only probable. For discussion, see G.A. Hartz, “Leibniz’s phenomenalisms”, in *Philosophical Review* 101(1992), 511-49.

<sup>265</sup> See *GP* II, 268: “Accurate autem loquendo materia non componitur ex unitatibus constitutivis, sed ex iis resultat, cum materia seu massa extensa non sit nisi phaenomenon fundatum in rebus, ut iris aut parheliion, realitasque omnis non sit nisi unitatum. Phaenomena igitur semper dividi possunt in phaenomena minora quae aliis subtilioribus animalibus apparere possent, nec unquam pervenietur ad minima phaenomena. Unitates vero substantiales non sunt partes, sed fundamenta phaenomenorum.” See also *GP* II, 276, 306, and 435-36. For discussion, see M. Mugnai, *Astrazione e realtà. Saggio su Leibniz*, Milano 1976, pp. 17-21; and F. Mondadori, “Solipsistic perception in a world of monads”, in *Leibniz: Critical and Interpretative Essays*, ed. M. Hooker, Minneapolis 1982, 21-44, on p. 27. Leibniz met with serious difficulties when attempting to develop a convincing criterium for “phenomena bene fundata”; cf. “De modo distinguendi phaenomena realia ab imaginariis”, in *GP* VII, 319f. He appeals to God in *GP* II, 495-96; and IV, 492-93. For discussion, see B. Mates, *The Philosophy of Leibniz. Metaphysics and Language*, Oxford 1986, 198-99, and 203; and G.A. Hartz, “Leibniz’s phenomenalisms”, pp. 520f.

<sup>266</sup> In *GP* II, 111 and 311, perception is defined as “multorum in uno expressio”; cf. *GP* VII, 330, where perception is defined as “repraesentatio variationis externae in interna”. For sometimes divergent definitions of “perceptio”, “sensio”, “cogitatio”, and “repraesentatio”, cf. *GP* IV, 109; and *Textes inédits*, ed. Grua, 512-513, and 538.

scious thoughts or apperceptions<sup>267</sup>. Apperception is generally used to indicate conceptional knowledge; more precisely, it is the awareness that accompanies perception<sup>268</sup>. Leibniz also drew a distinction between intuition and discursive reasoning. Now, which of these mental acts may be taken to correspond to the Peripatetic simple apprehension grounded in the intelligible species? Surely not apperception or discursive reasoning. Intuition would seem to be a better candidate here. However, intuition was mostly used by Leibniz to indicate our grasp of primitive truths or notions, and not that of undivided sense-dependent objects. The only remaining candidate to fit the bill would thus seem to be perception, which is the internal state of an individual substance or monad representing external things. Indeed, only perceptions as expressing isolated (possibly formal) features of material bodies and events can be significantly compared to intelligible species. For more details about the nature and function of these perceptions we must turn to Leibniz's view of ideas.

### 3.2. *Ideas: dispositional and virtual nativism*

All knowledge is based on innate ideas<sup>269</sup>. Ideas are sometimes assimilated to innate contents<sup>270</sup>, but in general Leibniz distinguished

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<sup>267</sup> See, for example, *GP* VII, 330-331: "Cogitatio autem est perceptio cum ratione conjuncta quam bruta, quantum observare possumus, non habent"; cf. *Principes de la Nature et de la Grace fondés en Raison*, in G.W. Leibniz, *Vernunftprinzipien der Natur und der Gnade. Monadologie*, ed. cit., § 4, and *Monadologie*, § 14, for the difference between perception and apperception. In *Nouveaux essais*, Leibniz develops the doctrine of the "petites perceptions"; cf. below.

<sup>268</sup> For discussion, see R. McRae, *Leibniz: Perception, Apperception, and Thought*, Toronto-Buffalo 1976.

<sup>269</sup> Valuable analyses of Leibniz's view of ideas are: L.E. Loemker, "Leibniz's doctrine of ideas", in *Philosophical Review* 55(1946), 229-49; J. Harris, "Leibniz und Locke zum Thema der angeborenen Ideen", in *Ratio* 16(1974), 210-226; A. Hausman, "Innate ideas", in *Studies in Perception*, eds. P.K. Machamer and R.G. Turnbull, Columbus (Ohio) 1978, 200-230; R.S. Woolhouse, "Locke, Leibniz, and the reality of ideas", in *John Locke. Symposium Wolfenbüttel*, ed. R. Brandt, Berlin-N.Y. 1981, 193-207; N. Jolley, *Leibniz and Locke: A Study of the "New Essays on Human Understanding"*, Oxford 1984; idem, *Light of the Soul*, ch. 8-10; G. Hunter & B. Inwood, "Plato, Leibniz, and the furnished soul", in *Journal of the History of Philosophy* 22(1984), 423-434; A. Ros, "Bedeutung, Idee und Begriff", in *Studia Leibnitiana* 21(1989), 133-154; H. Poser, "Der Begriff der

between ideas and concepts (or notions), where the latter stand for ideas actually conceived by the mind<sup>271</sup>. An idea is a faculty, a disposition, or a quality to produce concepts or notions<sup>272</sup>. The mind has innate dispositions for occurrent thoughts of objects to be tokened under certain conditions. Leibniz was not always clear about which ideas or principles he thought to be innate. In the *Nouveaux essais* he apparently wanted to restrict the scope of nativism to intellectual ideas only, but elsewhere he intimated that all ideas are dispositions. This point is particularly germane to the present discussion. In the Preface to the *New Essays*, Leibniz remarked that insensible perceptions are as important in the philosophy of mind as insensible corpuscles are in natural science. Leibniz's strategy was to identify innate ideas with innate dispositions, and then to reduce the latter to unconscious experiences, so that, in the end, ideas are grounded in "petites perceptions"<sup>273</sup>.

Jolley has correctly observed that Leibniz's views on ideas were for an important part a response to Malebranche and to the latter's controversy with Arnauld<sup>274</sup>. The virtual presence of ideas in the soul is a condition for their being grasped or being entertained as conscious notions. To have an idea of X simply is to be able by disposition to produce an expression of X. According to Leibniz,

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*Idee bei Leibniz*", in *Idea. Atti del VI Colloquio Internazionale del Lessico Intellettuale Europeo*, 223-235.

<sup>270</sup> See, for example, *GP* VII, 111, for the presence of divine rays in the soul, which suggests an innatism of contents.

<sup>271</sup> *Discours de Métaphysique*, § 27, p. 75: "Ainsi ces expressions qui sont dans nostre ame, soit qu'on les conçoive ou non, peuvent estre appelées idées, mais celles qu'on conçoit ou forme, se peuvent dire notions, concepts." Cf. *Nouveaux essais*, I.i.23, 69-70.

<sup>272</sup> *GP* VII, 263; *Nouveaux essais*, 447: "C'est là où je trouve l'original des idées et des verités qui sont gravées dans nos âmes, non pas en forme de propositions, mais comme des sources dont l'application et les occasions feront naître des énonciations actuelles." See also *Discours de Métaphysique*, § 26, p. 72. For the Cartesian background of ideas as dispositions, see *AT* V, 148, and *AT* VIII.2, 166-67; cf. also ch. XI, § 1.2. For the distinction between idea and thought, see *Nouveaux essais*, II.i.23, 199. For the assimilation of idea to concept, see, among others, *Nouveaux essais*, 254f. For discussion of the blurring distinction between ideas, thought, and concepts, see B. Mates, *The Philosophy of Leibniz. Metaphysics and Language*, 48. In *Nouveaux essais*, II.x.2, 140, idea is viewed as internal object. See also *Meditationes de Cognitione, Veritate, et Ideis*, in *GP* IV, 422-26.

<sup>273</sup> See the role of the "petites perceptions", in *Nouveaux essais*, pp. 52f, 112, and 199. See also Jolley, *The Light of the Soul*, 162-63.

<sup>274</sup> *The Light of the Soul*, ch. 8 and 9.

ideas are mental items rather than abstract entities, *pace* Plato and Malebranche<sup>275</sup>. Ideas are mental dispositions to form certain thoughts; in this sense, they are persistent properties of the mind and not transitory events, as Arnauld would have it. Moreover, the presence of innate ideas in the soul blocks out Locke's tale of a "tabula-rasa", but it does not imply that the soul is always thinking<sup>276</sup>.

Leibniz sometimes qualified the presence of ideas in the soul as being virtual<sup>277</sup>. This must be understood in terms of his view that the acquisition of knowledge is sense-independent. Ideas are not just 'passive' dispositions to be triggered by sensory stimuli; rather, the soul is in possession of positive preformations or *active* dispositions for developing perception and cognition<sup>278</sup>. There are no 'pure' dispositions that are not realized in actually existing states or modifications of a substance. The only reduction possible here is one of awareness<sup>279</sup>.

### 3.3. *Perception of the sensible world*

Leibniz's universe was made up of individual substances, in later writings called monads, which he supposed to be capable of mirroring or expressing God and/or the world<sup>280</sup>. Human perception and human knowledge are particular instances of a wider form of mirroring in this universe. Perceptions are states of the human

<sup>275</sup> For a positive interpretation of Malebranche's vision in God, cf. *GP* VI, 578.

<sup>276</sup> Notice that Leibniz's notion of innate ideas was closely linked to the doctrine of "petites perceptions". Jolley, *Locke and Leibniz*, 100, argues that Leibniz's theory of "petites perceptions" was an attempt to solve Descartes' dualism between the mechanical world of material reality and the immaterial reality of the mind. It also constituted an implicit reply to Gassendi's criticisms of Descartes.

<sup>277</sup> *Nouveaux essais*, IV.xi.13, 447, and "Préface", 52.

<sup>278</sup> Cf. *Nouveaux essais*, 80. See Jolley, *Locke and Leibniz*, 111f and 171-183. In his discussion with Locke, Leibniz suggested that through reflection we have ideas of the mind and of its fundamental properties; cf. *Nouveaux essais*, "Préface". However, Leibniz's view of ideas of reflection contrasted with his more prominent dispositional account of ideas. On the latter account, we are innately disposed to have occurrent thoughts under specifiable conditions. By contrast, the explanation offered by the reflection account is circular: it explains the acquisition of ideas on the assumption that we already have ideas.

<sup>279</sup> *Nouveaux essais*, 79.

<sup>280</sup> In *Nouveaux essais*, II.i, Leibniz observed that the mind is a small world in which distinct ideas represent God and confused ideas represent the world.

soul reflecting aspects of the world on the basis of innate dispositions. Leibniz also defined the human mind as a “simulacrum mentis primae”: the mind has a disposition to express God’s ideas, since each effect expresses its cause<sup>281</sup>. In addition, however, the human mind has ideas of its own, and these correspond to God’s ideas<sup>282</sup> in the sense that they express them in Leibniz’s technical sense of the word<sup>283</sup>.

Ideas are not dispositions actualized by the presence of sensory impressions or stimuli; mental perception is essentially sense-independent. It was probably partly for this reason that Leibniz postulated a constant divine influence on the mind, God being defined here as the agent intellect of the rational soul<sup>284</sup>. This view was again closely related to the pre-established harmony. The process of actualizing ideas was supposed to take place by progressive expression. But did Leibniz think that perceptual ideas are inborn in the same way as mathematical axioms and logical truths?

Leibniz at times seemed unable to decide whether “to perceive” should be seen as a monadic or as a dyadic predicate, that is, whether it consists in the modification of a conscious subject or in

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<sup>281</sup> *GP* VII, 291, and *Discours de Métaphysique*, § 28, pp. 76-77. Cf. also *GP* IV, 426.

<sup>282</sup> In outlining his theory of ideas, Leibniz referred to Plato’s doctrine of reminiscence; cf. *Discours de Métaphysique*, § 26, 73. However, by identifying divine ideas with God’s dispositions to think in certain ways, Leibniz was not committed to the existence of abstract entities like the Platonic Forms. Cf. *GP* VII, 311, and *Nouveaux essais*, 78-79. For discussion of Leibniz’s nominalism, see B. Mates, *The Philosophy of Leibniz. Metaphysics and Language*, 49-50, and 246. Unlike Spinoza, Leibniz did not postulate a strict one-to-one correspondence between existing finite particulars and divine ideas. See M.D. Wilson, “Objects, ideas and “minds”: comment on Spinoza’s theory of mind”, in *The Philosophy of Baruch Spinoza*, ed. R. Kennington, Washington (D.C) 1980, 103-120. In this respect, his views were closer to the scholastic doctrine of divine ideas which, *qua* exemplars, characterize God’s relation to creation. There was a sharp distinction between God’s ideas and the existing particulars of which God has ideas, not only because there is no one-to-one correspondence between them, but also because the ideas are in God, while the existing particulars are his creatures: God’s ideas and particular entities belong to different categories.

<sup>283</sup> See M.A. Kulstad, “Leibniz’s conception of expression”, in *Studia Leibnitiana* 9(1977), 55-76; and A. Heinekamp, “Ars characteristica und natürliche Sprache bei Leibniz”, in *Tijdschrift voor Filosofie* 34(1972), 446-488, on p. 467.

<sup>284</sup> Cf. *Discours de Métaphysique*, § 28, p. 76. For the problematic aspects of Leibniz’s doctrine of a divine illumination, cf. Jolley, *The Light of the Soul*, 142-49.

a relation between the subject and some external thing. Of crucial significance here is Leibniz's assumption that verbs like "to perceive" do not just denote a specific experience or a mental event with causal antecedents, but rather a successful effort to express the world at a certain level and from a certain point of view. In *Nouveaux essais* Leibniz suggested that empirical knowledge is not innate in the sense in which analytical truths are<sup>285</sup>. Yet, perception does not depend on sensory stimuli either. God has so fashioned our souls that perceptions correspond to events in the external world<sup>286</sup>. Perceptions are not caused, nor are they even occasioned by bodily events or stimuli: they merely reflect them by virtue of an intrinsic causal self-sufficiency. The mind draws its states from its own resources. The structural properties on which mental representation is based are the causal powers of the mind itself<sup>287</sup>.

Now, what kind of alternative did Leibniz give for traditional intelligible species? As pointed out above, Leibniz's substitute for the intelligible species were perceptions expressing determinate features of the world. These atomic representations are related to the innate ideas, which in fact are active dispositions of the soul to develop articulate representations.

In *Nouveaux essais*, Leibniz claimed that it was his intention to harmonize Plato, Aristotle, Descartes, and Scholasticism<sup>288</sup>. Still, he rejected mind-body interaction, and thus he implicitly also rejected the sense-dependency of intellectual cognition of external bodies. Leibniz's view of perception was in fact a radical alternative to the traditional notion of intelligible species. For this reason, then, his position was similar to that of Spinoza and that of Malebranche. Spinoza had taken a metaphysical approach to the problem of the origin of perceptual ideas, arguing that perceptual ideas are modes of the human mind which it partially shares with

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<sup>285</sup> See *Nouveaux essais*, I.i.

<sup>286</sup> Cf. *Théodicée*, § 356-57: there is a natural relation between a mental representation and what it represents.

<sup>287</sup> In this sense, Leibniz's philosophy of mind was similar to Cusanus'; see ch. VI, § 1.1.

<sup>288</sup> *Nouveaux essais*, 71-73.



the divine intellect. In a similar vein, Malebranche had argued that we perceive the essence of bodies in God. Leibniz's idea of a pre-established harmony was a similar attempt to circumvent traditional mind-body problems. Unlike Malebranche, he saw the physical and the mental as closed systems, each with their own sacrosanct laws<sup>289</sup>. On this view, God just sets in motion the causal chains of material and mental events without needing to intervene again, whereas, according to Malebranche, God continually intervenes as the real cause of every single event.

Leibniz's theory of perception was also meaningfully related to some more traditional views. Like Cusanus, Leibniz saw the mind as a sort of microcosm that expresses the external world on the basis of innate, active dispositions. In this context it is also significant that Leibniz defined God as the agent intellect of the soul. A view of comparably Avicennean stature had somewhat earlier been held by Peripatetics such as Hurtado and Peñafiel. As opposed to them, however, Leibniz radically departed from the view that perception is sense-dependent. Representation of the external world is neither causally dependent on sensory information, nor is it occasioned by brain traces. According to Leibniz, our knowledge of the world depends on God in the sense that He has endowed the soul with ideas and has created the world in such a way that our perceptions correspond to external events.

The view that perception is grounded in a pre-established harmony echoed the notion of a "colligantia" between sensory and mental representations, as it had been developed in different ways by Jean de la Rochelle, Peter Olivi, and Suarez<sup>290</sup>. Also noteworthy in this context is the position of Genua and Teofilo Zimara, who had argued that we generate mental representations on the occasion of corresponding phantasms<sup>291</sup>. Leibniz radicalized this view of a correspondence between bodily states and mental events, urging a new theory of perception that should be understood against the background of his broader scientific outlook. For A to perceive B, is just for a state of A to express a state of B. Perception does not require that the state of the perceiver should

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<sup>289</sup> See *GP* VII, 313, and IV, 484.

<sup>290</sup> See ch. II, § 1.4, ch. III, § 3.4, and ch. X, § 1.6, respectively.

<sup>291</sup> Cf. ch. VIII, § 1.2 and 4.

resemble the state of the perceived, no more than the string of symbols in an algebraic equation should resemble the circle expressed by the equation<sup>292</sup>. The perceptions of rational human beings do indeed give us information about the external world, but this is not because the world is qualitatively similar to these perceptions. Rather, the information can be gleaned only through the application of scientific laws, which allow us to infer the structure of the world from features of the phenomena.

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<sup>292</sup> *Nouveaux essais*, 131f.

## CONCLUSION

Aristotle's integrated theory of perception and intellectual thought served as a framework for the Scholastic doctrines of sensible and intelligible species. In the interaction between actualized medium and sense organ the senses become identical in form to the external objects. On the basis of phantasms, which may be called "images" insofar as they are *representational* structures produced by the phantasy, the agent intellect actualizes *noeta*, that is, it generates or reveals the intelligible kernel contained in the sensory information.

Most Peripatetics in the Middle Ages and in the Renaissance interpreted Aristotle's psychology of cognition in terms of a theory of abstraction based on the mediating role of representational forms called "intelligible species". In contrast with the direct grasp of cognitive content in the phantasms, as Aristotle had enigmatically suggested, Thomas Aquinas hypothesized a *mediated* assimilation of the essence of sensible reality: he saw empirical knowledge as the final outcome of a process by which an unknowing agent intellect abstracts a representation, thereby triggering a mental grasp of the represented content. In Aristotle's categorial framework, intelligible forms had by definition been potentially or actually *present* to the mind, which grasps them when performing the intellective act. Intelligible species, by contrast, were supposed to be *produced*, in the sense that the human mind generates a representation of sensible objects. Intelligible species act as the carriers of mental content.

Like Aristotle, medieval Scholastics saw sense perception as a process by which information is delivered to the mind to be selectively used by it. The mind must first transform this information before it can make effective use of it. This transformation takes place when the active feature of the mind abstracts an intelligible species from sensory images, thereby purveying a cognitive con-

tent to the knowing mind. The theory of intelligible species tried to give a non-circular account of the acquisition of knowledge, explaining intellectual abstraction in terms of causal interactions between the entities involved. Perceptual experience is understood as a structure in which information about distal objects is coded in sensible representations of particular things (the phantasms), and passed on to a converter (the agent intellect) for the generation of universal representations. Agent intellect and intelligible species are non-intelligent subsystems in this structure, a non-conscious agent for processing an un-known representation. Primary cognition thus takes place in an informationally encapsulated system, and it is based on simple representations regarding undivided objects.

Thomas' doctrine of intelligible species met with a wide spectrum of reactions. Challenging criticisms were formulated in the first fifty years after his death. Ontological objections purported to show that physiologically embedded representations cannot determine the immaterial mind. Logical objections tried to show that the idea of a formal mediation in intellectual knowledge is intrinsically incoherent. Henry of Ghent and Ockham argued that the sole purpose of perception and knowledge, as conceived by the species doctrine, was to make an internal copy of the thing perceived or known—a view that would lead to infinite regress: if perception is just the construction of a copy of the thing perceived, then a second copy is needed to perceive the first one, and so on *ad infinitum*. This type of criticism, which had already been used by Sextus Empiricus against the Stoics, did not take into account that the intelligible species was supposed to be an unconscious and instrumental entity. After Ockham, from the 1320's onward, the issue gradually disappeared from the philosophical agenda, and not much happened until the second half of the fifteenth century.

The doctrine of intelligible species formed an integrating part of the heritage of Scholastic philosophy handed down to the Renaissance. A large number of authors now applied themselves to the notion of species, defending, revising or rejecting it, as the case might be, including fifteenth-century Platonics, the larger

part of Renaissance Aristotelians, and exponents of late sixteenth-century naturalism.

The reception of the species doctrine in the early Renaissance was strongly marked by the revival of Platonism at that time, the essential traits of which in the field of psychology were a view of the mind as "opifex" of its cognitive contents, and the sense-independency of intellectual knowledge. On the threshold of modern philosophy, Cusanus devised a view of the acquisition of empirical knowledge in which the notion of species still served a role of importance. When the mind mixes with the physiological spirit, it makes contact with the mechanically transmitted effects or species of external bodies. Then, by virtue of innate dispositions which are qualified as intelligible or formal species, the mind generates mental representations of sensible forms. Authoritative representatives of Florentine Neoplatonism, such as Pico della Mirandola and Ficino, tried to reconcile the Platonic view of mind and the Scholastic notion of mental representation, leading them to reconsider one of the pillars of Aristotelian psychology, namely, the claim that all knowledge is sense-dependent. In the course of this reconsideration, intelligible species were reclaimed as contents of cognition, and intellectual abstraction was replaced by a reception of the products of a cosmic metabolism.

Basing themselves on a closer reading of Aristotle and Averroes, some members of the first generation of the School of Padua cast doubt on the need for intelligible species. They argued that the notion of species is just spurious, as it is not found in Aristotle and Averroes themselves, while also being incompatible with central elements of Aristotelian psychology. It clashes with Aristotle's intended elimination of an intellectual memory, and it leads to an infinite regress in the cognitive process. Moreover, the systematic application of the principle of the excluded middle proves to be fatal for the species, as it cannot be established what species really 'are'. In a reaction to this line of thought, Pomponazzi and Zimara defended the species with arguments that leaned heavily on the medieval Scholastic and Averroist tradition, and that would be questioned by Girelli and Porzio.

Of great historical interest is the fact that in the Renaissance debate there emerged an interpretation of species as idea or notion.

Thus, Nifo submitted that the intelligible species only makes sense when interpreted as “notio” is, explicitly referring here to the Aristotelian *noema*. The intelligible species now came to be seen as a mental act with representational content. This view had already been suggested by John of Malinas, and is also found in Buccaferrea, Vimercato, Montecatini, and Piccolomini. Fracastoro connected the species to a “subnotio”, a representation of the singular features of material reality, presented by the phantasms to the intellect, and serving as the basis for intellectual knowledge. This view was probably influenced by the Epicurean or Stoic notion of *prolepsis*, and in this sense it can be seen as a precursor of Gassendi’s theory of ideas.

In the sixteenth century, the Simplician Genua worked the Platonist appropriation of species into a peculiar form of ‘sense-dependent innatism’, such that intelligible species are innate, but are present to the mind only on the occurrence of the proper phantasms. A more explicit identification of intelligible species and (human) ideas is found in Polo, while also Agnello used these terms interchangeably. Under the combined influence of Neoplatonic metaphysics and Scholastic psychology, Giordano Bruno developed a view of species (or “shadows”) as functional items in the process of grasping sensible forms as well as separate intelligible objects. Bruno saw the species as intramentally generated notions that represent the ideal or formal structure of natural reality at the mental level.

The view of the cognitive process underwent a number of significant changes in the course of the Renaissance debate. Tendencies that had already been present in the cognitive psychology of some medieval authors, now revealed themselves in a more pronounced form and manner, while they would also be dominant in many modern accounts of knowledge. In the first place, the distinction between mental act, representation, and content was blurred. Secondly, the knowledge of individuals, insofar as based on species, was often regarded as being prior to the knowledge of universals. Thirdly, new accounts were given of the traditional operations of the intellect. With regard to the latter, the view that empirical knowledge requires the mind’s conscious attention to the information contained in sensory representation was already found

in various medieval Augustinians who were critical of the species doctrine, while also Renaissance defenders of the species, such as Fracastoro and Zabarella, had made this claim. In connection with the rejection of classical faculty psychology, this view became a central point in some later Scholastics, such as Suarez and Rubio, and in modern non-Aristotelian philosophers.

In the disputes on intelligible species among schoolmen of the sixteenth and seventeenth centuries, it happened only very rarely that the need for intelligible species was seriously questioned. The first members of the Second Scholasticism sank their teeth into an issue that is closely bound up with the species doctrine, namely, the question of the illumination of sensory representations by the agent intellect. The controversies among later members of the Second Scholasticism were mainly about the cognitive role to be given to the species, and about the ways in which the mind may interact with sensory representations in the generation of knowledge. The 'biological' approach pursued at this point by later Scholastics, who regarded knowledge as a vital and purely mental operation, foreshadowed the mentalism to be found in many modern accounts.

Modern philosophy was on the whole extremely critical of Scholastic psychology. Still, there were also various kinds of interaction between Scholasticism and modern philosophy, first and foremost in the conceptual apparatus used by the moderns, which was deeply imbued with traditional views. The disappearance of the species from modern accounts of knowledge acquisition had been prepared in the psychologies of the late Renaissance. An example here is Telesio's naturalistic approach in the psychology of perception, which had *ipso facto* eliminated the need for formal mediation at the mental level, and which had been a source of inspiration for Campanella's refutation of sensible and intelligible species. It is historically significant that Telesio and Campanella, like most modern philosophers from Descartes onward, emphasized the role of motion in the generation of perception.

Descartes drew a derisive picture of the species as small flying images, which were supposed to resemble the objects that emit

them, and which would act as the cause of perception. Without distinguishing between sensible and intelligible species, he dismissed all species as a gratuitous and false assumption: firstly, because no corporeal entities can penetrate the mind, and secondly, because there is no need for mental representations to resemble their objects. Descartes' dismissal was certainly less than fair, being aimed more at a straw man than at any historically accurate version of the species doctrine. Although the intelligible species were indeed generally held to resemble their objects, most Scholastics had interpreted this resemblance in terms of an abstract and structural relation, rather than in terms of a pictorial or iconic one.

Descartes' psychology of cognition was in some respects cognate to that of earlier opponents of the species who had held on to Aristotelian naturalism. Many critics of the intelligible species had presumed the human mind to be capable of a direct grasp of the intelligible kernel of material reality as contained in the phantasms. In a similar vein, Descartes looked upon the intimate link between the mind and the pineal gland as the basis for the production of ideas. Moreover, just like Scholastic opponents of intelligible species had been unable to explain the direct grasp of essences in the phantasm, so Descartes, too, was unable to explain how the pineal gland can convey information to the mind. The perception of sensible qualities, whether primary or secondary, remained a mysterious result of the interaction between mind and body.

There are also numerous parallels between Descartes' brand of dispositional innatism and more traditional views of species and ideas. A significant example is the parallel between Descartes' view of the innateness of perceptual ideas and the virtual innatism with regard to intelligible species as developed by authors such as Giles of Rome, Godfrey of Fontaines, Marcantonio Genua, and Suarez.

Hobbes no less than Descartes misconceived the fundamental difference between sensible and intelligible species. He indiscriminately thought of visible and intelligible species as some kind of flying images, "passing to and from the object". Hobbes' rejection of the species was different from Descartes'. In Descartes, the ab-



stracted species were replaced by perceptual ideas produced in the mind on the occasion of cerebral motions. In Peripatetic psychology, the intelligible species had been the product of the mind's processing sensory information. Hobbes saw perception as essentially a reaction: when the brain reacts to external stimuli, the effects themselves are images or primary ideas.

Gassendi's account of the acquisition of primary knowledge related to Peripatetic psychology in a more straightforward way. He believed that perceptual and mental acts are generated when corpuscular species stir the brain; it is essential for human knowledge that it depends on these incoming representing entities, called impressed species. Unlike Descartes and Hobbes, Gassendi entered into detailed discussions with the philosophical tradition, presenting lengthy doxographical surveys as well as meticulous refutations. Making no sharp distinction between mental acts and representations, Gassendi held a position that was similar to that of some medieval authors, who were critical of intelligible species, but did not dismiss the concept as completely meaningless.

Not all Cartesians shared Descartes' blunt repudiation of the doctrine of species. Indeed, several later French Cartesians were less radical in their opposition toward Peripatetic psychology and rephrased the doctrine of (sensible) species in Cartesian terms. Malebranche and Arnauld, by contrast, each gave an account of empirical knowledge that was different from both the Peripatetic and the original Cartesian account. They rejected Scholastic psychology as well as the Cartesian view of mind-body interaction, and severely restricted the causal efficacy of the soul. Yet, Arnauld's argument for a strict relation between act, content and representation had forerunners in medieval and Renaissance authors. Similarly, Malebranche's view of perceptual knowledge may be compared to certain Avicennian positions held by medieval and contemporary authors.

Locke's conception of ideas resembled that of traditional intelligible species in the sense that they both envisaged a sense-dependent representation mediating between an immaterial mind and material reality. Allowing for some fundamental differences, Locke's account of the physical processes underlying the generation of simple ideas of sensation may be characterized as a me-

chanicist rephrasal of the doctrine of sensible species developed in medieval optical research. A severe critic of Lockean “ideism”, John Sergeant, worked out a robust form of realism centering on the concept of “notion”, which was strongly reminiscent of the psychology of Nifo and his sixteenth-century followers.

Like the majority of Cartesians, also Leibniz rejected the theory of species, and as an alternative he developed a form of dispositional innatism. In Leibniz’s view the mind is a sort of microcosm in which the external world is expressed through innate, active dispositions. Perception in Leibniz is based on the existence of a pre-established harmony, a view that reminds of the “colligantia” between sensory and mental representations, as suggested in different ways by Jean de la Rochelle, Peter Olivi, and Suarez. Leibniz radically broke with the view that perception is sense-dependent, however. Representation of the external world is neither causally dependent on sensory information, nor occasioned by cerebral motions. According to Leibniz, our knowledge of the world depends on God, in the sense that He has endowed the soul with ideas and has created the world in such a way that our perceptions correspond to external events.

The theory of species is highly interesting from a psychological point of view, because of its attempt to combine an account of what is in the mind with a causal story starting in the sensible world. More specifically, it tried to locate the causes of mental events, and thus to anchor our empirical knowledge in the world itself. The concept of natural agency played a leading role in Aristotelian explanations of natural phenomena, including perception and cognition. Sensible things, by virtue of their formal constitution, may cause changes in the sensory organs. The sensory transducers carry the information received to the inner senses, where it gives rise to phantasms (sensory representations). Peripatetic epistemology was for the most part a combination of direct realism and the belief that perception and cognition occur by dint of causally mediating entities. The colour of this page, for example, creates in your eye something like itself, which in its turn immediately gives rise to your seeing the colour of this page.

Sensory images are the first stage in a chain of information acquisition, and they warrant the objectivity of mental content.

In the domain of intellectual cognition the species doctrine postulated the existence of intelligible species, mediating principles between mind and world. These principles themselves are not primarily known; this avoids the danger of an infinite regress of mediating principles. The species doctrine presumed that intellectual knowledge of material objects is possible only if the human soul has at its disposal a coded representation of these objects; it is not required, however, that this representation itself be known. The intermediate representation is turned into a full-blooded mental concept in a process of abstraction, achieved by an agent which is again thought of as sub-cognitive or un-knowing. The entire structure for processing internal representations is thus located at a level below that of intelligent thought. This is how the doctrine of intelligible species met the formidable challenge of all cognitive psychology, namely, to give a non-circular account of knowledge acquisition. Indeed, the theory of the intelligible species, in its historical development from Antiquity to the Modern time, may be seen as a sustained effort to understand knowledge acquisition in terms of elements and agents that are themselves neither cognitive contents nor self-sufficient cognitive capacities. The species were not seen as primary objects of awareness, but rather as *representations* of such objects, which yet contain more than purely perceptual information. Critics who suggested that species are in fact mere surrogates of primary objects failed to appreciate this point.

A particularly attractive feature of the Peripatetic program in cognitive psychology was its fundamentally biological orientation. Man's capacity for mental representation is firmly rooted in a biological basis, which suggests that it should be possible to give an account of cognition that can dispense with a privileged realm of the mental. The majority of medieval and Renaissance Aristotelians believed in the immateriality of mind, yet endorsed essential aspects of the biological stance: they saw mind as the form of the body, and they believed that the processes leading up to perception and cognition are not directly accessible to mental inspection.

The extensive use of physical concepts in discussions of mental phenomena eventually brought out some of the problems that had already been present *in nuce* in Aristotle. For example, Aristotle had failed to give a sharp definition of mental content and representation, and had rather enigmatically claimed that the mind may become identical with forms detached from matter. Peripatetics in the Middle Ages and in the Renaissance, who emphatically saw the mind as immaterial, tried to bridge the gap between mind and matter in terms of a theory of species, at least insofar as species were supposed to act as the basis for mental content. These attempts were severely constrained by the Aristotelian legacy of a physicalist approach to cognition.

Peripatetics were convinced that mental states should be located in a non-material medium, the possible intellect. At the same time, however, they saw psychology as evidently a natural science; thus, the intelligible species were seen as belonging to a nexus of efficient causes and effects. In consequence of this approach, mental representations could not be reduced to physiologically embedded phantasms, but there could also be no doubt that they depend on the latter. Such was the problem faced by Peripatetic psychology. Now, although the doctrine of intelligible species gave a more detailed account of knowledge acquisition, it had no real solution for the 'ontological' status of the cognitive objects and representations involved in mental acts. This problem was intimately bound up with some basic aspects of Aristotle's categorial framework in psychology. Species were supposed to be mentally inaccessible and unconscious items (analogous to the internal representations postulated by contemporary cognitive science). This feature may have been an asset from a methodological point of view (enabling a non-circular account of knowledge acquisition), but at the same time it threatened to discredit the species from a conceptual or ontological point of view, making it very difficult to give a coherent account of the *nature* of intelligible species. The 'average' defender was apt to stress the causal role of intelligible species, regarding them primarily as bearers of information. Thus, the doctrine of intelligible species might readily give a functionalist account of knowledge acquisition, but it did not explain what mental representations themselves *are*. Yet, that is precisely what the

Aristotelian physicalist framework was specifically tailored to do: to describe things and events *in terms of what they are*. In this sense, then, the intelligible species as an ontologically 'thin', functionally defined entity was doomed to remain a *Fremdkörper* in Aristotelian psychology.

Aristotle's account of the psychology of cognition came under attack when Aristotelian physics was pressed aside by the new physics. Where Peripatetics had seen causation as a qualitatively induced process, things causing changes by virtue of the powers that make them the sort of things they are, the new philosophy of the seventeenth century saw physical reality as a structure of law-governed relations, to be expressed in mathematical language. In addition, rationalist philosophers drew a sharp boundary between the realm of cognition and that of physical reality. Yet, all this did not mean that modern theories of cognition relinquished every aspect of the more traditional views. For example, like the Scholastics, most moderns thought that the foundations of knowledge consist in attitudes toward non-propositional objects: cognition rests on apprehensions of simple, non-complex, non-propositional items. Thus, modern philosophers shared the traditional belief that there is a stage at which cognitive processes are carried out in a medium that is fundamentally non-discursive. The main difference here is that, in the act of primary knowledge acquisition, moderns replaced the intelligible species by ideas.

Both the theory of species and that of ideas tried to explain how conceptual categorization proceeds in response to perceptual inputs. By and large, Peripatetics as well as moderns saw perception and cognition as inferentially constrained. They differed, however, on how internal representations are related to the world. Species were supposed to represent external objects by resembling them, a resemblance that was supposed to be based on the way in which they are causally produced. Modern philosophy on the whole avoided the physicalist approach to cognition, with notable exceptions such as Hobbes and Gassendi. Most moderns denied that there is a resemblance between things and ideas, but they often had no satisfactory alternative to explain how ideas or acts of perception may represent their objects.

Cartesians philosophers, for example, found it extremely hard to explain the acquisition of knowledge in non-circular terms. In general, they simply assumed that ideas represent material things through their content. Descartes' purpose was to expel intrinsic intentionality from corporeal reality, and to restrict it to the mind. In doing so, he presumed ideas to have reference to entities distinct from themselves, and having a mode of existence different from their own. Descartes saw perceptual ideas as cognitive responses, interpretations of physical motions and patterns in the brain. It is not inconceivable that, if pressed further, Descartes and his followers would have seized on an isomorphism between algebraic and geometrical representation as the key to how unextended ideas might represent material reality. How the intellect is supposed to 'apply itself' to cerebral events was left notoriously obscure, not only by Descartes and his followers, but also by Locke.

Peripatetic cognitive psychology gave a naturalistic account of intellectual knowledge: the intellect grasps external bodies by means of unknown representations which arise from the synergy between sensory representations and the active feature of the mind. The closest heirs to this approach were Hobbes and Gassendi. Many modern philosophers rejected the idea of a causal interaction between mind and body. Some of them, such as Malebranche and Spinoza, developed accounts of knowledge with a strong metaphysical flavour. By contrast, Descartes and many of his followers tried hard to relegate questions about ideas and intelligibility to the realm of pure epistemology. In doing so, they ignored the call for an ontologically comprehensive explanatory model that might provide a step-by-step description of the course of physical, sensory and mental events. Instead, they replaced the abstraction of sense-dependent mental representations by the mysterious translation of sensory information into cognitive contents.

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## INDEX PERSONARUM

- Aaron, R.I. 272, 498, 501, 503, 505.  
 Abaelardus 206, 373, 505.  
 Abra de Raconis, Carolus Franciscus 250, 337-38, 354.  
 Abubacher 72.  
 Achillini, Alessandro 4, 5, 14, 50, 51, 56-63, 65, 71, 74, 81, 83, 84, 89, 91, 93, 94, 96, 104, 105, 110, 118, 136, 140, 148, 150, 167, 214, 232, 241-43, 256, 259, 283, 315, 375, 493, 512.  
 Acworth, R. 517.  
 Adam, Ch. 353.  
 Adams, R.M. 358, 501.  
 Adelardus de Bath 30.  
 Aegidius Romanus 5, 16, 36, 41, 47, 68, 74, 97, 113, 116, 120, 121, 123, 124, 172, 178, 251, 269, 276, 280, 284, 299, 302, 313, 320, 343, 379, 380, 384, 539.  
 Aetius 500.  
 Agnello, Scipio 196, 213-14, 260, 369, 376, 537.  
 Agricola, Rodolphus 429.  
 Agrippa, Cornelius 128, 195.  
 Akkerman, F. 444.  
 Alamannius, Cosmas 338.  
 Alberti, A. 404, 406, 413.  
 Alberto Pio, Prince 95.  
 Albertus de Saxonia 52.  
 Albertus Magnus 5, 18, 29, 43, 50, 53, 54, 62, 65, 72, 75, 96, 97, 110, 113, 211, 226, 240, 246, 277, 280, 284, 301, 313, 320, 325, 335, 373, 412, 415.  
 Alcañiz, Fl. 340.  
 Alessio, F. 394.  
 Alexander Aphrodisiensis 7, 8, 10, 12, 53, 61, 72, 105, 131, 133, 144-46, 149, 151, 171, 174, 175, 185, 190, 191, 210, 225, 229, 233, 242, 325, 346, 348, 410.  
 Alfarabi 29, 275.  
 Alhazen 48, 202, 263, 358, 393, 503, 509-11.  
 Alkindi 347, 479.  
 Alonso, Francisco 339, 350, 448.  
 Alphonsus Vargas Toletanus 66, 72, 107, 381.  
 Alquié, F. 355, 476, 477, 480, 493.  
 Alvarez, B. 294, 298, 309, 336.  
 Amerbach, Vitus 132-33, 465.  
 Ammonius 428.  
 Anderson, R.F. 501.  
 André, D.M. 132, 294, 295.  
 Andronicus 225.  
 Anselmus 331, 449.  
 Anton, J. 269.  
 Antonacci, A. 103, 104.  
 Apollinaris Offredus Cremonensis 53, 65, 82, 139, 292, 301.  
 Apuleius 446.  
 Aquila, R.E. 445.  
 Aquilecchia, G. 203.  
 Arbini, R. 365, 367.  
 Argyropoulos, J. 6, 7, 19, 62, 129, 179, 182, 269.  
 Ariew, R. 353.  
 Aristippus 362.  
 Aristoteles 3, 4, 10-12, 19, 21, 23, 28, 30, 45, 49, 52, 54, 55, 57-59, 62, 63, 71, 76, 80, 84, 89, 90-92, 94, 95, 97, 106, 111, 125, 128, 130, 133, 134, 139, 150, 161, 162, 167, 171, 173-76, 179, 189-92, 195, 199, 203, 214-16, 223, 224, 226, 230, 237, 239, 242, 243, 249, 256, 269, 271, 272, 276, 282, 284, 296, 304, 307, 308, 309, 315, 331, 348, 353-55, 357, 364-66, 373, 376, 378, 379, 381, 401, 409, 410.

- 413, 420-22, 428, 432, 436, 439,  
 443, 474, 485, 488, 500, 518, 520,  
 522, 523, 524, 531, 534, 536, 543,  
 544.  
 Armogathe, J.-R. 369.  
 Armstrong, D.M. 500.  
 Armstrong, R.L. 497.  
 Arnauld, Antoine 143, 194, 199,  
 213, 273, 370, 371, 375, 471, 473,  
 474, 482-95, 498, 525, 528, 529,  
 540.  
 Arriaga, Rodrigo de 111, 327-30,  
 335, 342, 350, 448.  
 Ashworth, E.J. 354, 370.  
 Asulano, E.L. 7.  
 Augustinus 16, 22, 47, 60, 72, 130,  
 210, 235, 258, 275, 284, 289, 291,  
 296, 309, 322, 331, 338, 343, 359,  
 362, 379, 381, 411, 436, 439, 449,  
 487.  
 Avempace 72, 177, 284, 416.  
 Averroes 4, 10, 16, 36, 50, 52-57, 59,  
 62, 63, 66-68, 71-77, 80-84, 86,  
 87, 89, 91, 92, 94-97, 100, 104-  
 107, 127, 136, 137, 139, 144, 145,  
 149-51, 154, 159, 160, 164, 165,  
 167, 168, 173-75, 179, 182-84,  
 191, 226, 230, 242, 243, 256, 257,  
 292, 305, 315, 325, 348, 428, 494,  
 536.  
 Aversa, Raphaelae 224, 323-24, 344.  
 Avicenna 53, 72, 105, 233, 275, 284,  
 291, 321, 323, 338, 348, 451, 483,  
 494, 496.  
 Ayers, M. 504.  
 Bacilieri, Tiberio 14, 50, 51, 64-67,  
 71, 74, 84, 89, 91, 93, 94, 210,  
 248, 256, 259, 288, 493.  
 Bacon, Francis 191, 195, 355, 390,  
 428, 429.  
 Baker, G.P. 366, 386.  
 Baldini, A.E. 239, 240.  
 Balic, C. 107, 170.  
 Balz, A.G.A. 354, 396, 399, 400.  
 Bañes, Domenicus 270, 287-88.  
 Barbaro, Ermelao 18, 29.  
 Barbotin, E. 106.  
 Barlaeus, Caspar 421.  
 Barnouw, J. 396.  
 Barozzi, Pietro 4, 10, 50, 72, 89, 256.  
 Basso, Sebastiano 250, 422.  
 Baur, L. 20.  
 Bax, A. 504.  
 Bazán, B. 58, 131.  
 Beade, J. 461.  
 Beeckman, Isaac 421, 422.  
 Belaval, Y. 355, 369.  
 Bellutus, Bonaventura 136, 224, 308,  
 341, 345, 404.  
 Berg, Conrad 440.  
 Berigardus, C.G. 224, 348-49, 412,  
 420, 428.  
 Berkeley, George 294.  
 Bernardi, Ioan. Baptista 248, 249.  
 Bernhardt, J. 390-95, 401.  
 Bertman, M. 391, 396.  
 Bérubé, C. 314, 348.  
 Bessarion 6, 111, 129.  
 Beyssade, J.-M. 368.  
 Bianchi, M.L. 352, 464.  
 Billanovich, M. 250.  
 Blay, M. 391, 401.  
 Bloch, O.R. 404-406, 409, 410, 412.  
 Blom, H.W. 427.  
 Blum, P.R. 203, 454.  
 Blumberg, H. 66.  
 Blumenthal, H.J. 8, 161, 162.  
 Boethius 142, 413.  
 Bonansea, B.M. 215, 218-21.  
 Bonaventura 21, 48, 235, 241, 297,  
 368, 405, 524.  
 Borgias, F. 282.  
 Borgnet, A. 415.  
 Bormann, C. 20.  
 Bormann, K. 26.  
 Bos, E.P. 423.  
 Bossier, F. 7, 161, 239.  
 Bovelles, Charles de 16, 19, 38, 41-  
 46, 89, 90, 195, 205, 235, 246,  
 251, 255, 263, 264, 284.  
 Boyle, Robert 251, 498, 500.  
 Bracken, H.M. 473, 481, 487, 491.  
 Brandt, F. 352, 392-94, 396, 400.  
 Brandt, R. 506, 527.  
 Brandt Bolton, M. 501.  
 Bretschneider, C.G. 130.  
 Bridges, J. 509.



- Brown, St. 473, 523, 525.  
 Brown, V. 19, 62.  
 Brundell, B. 404, 405, 409, 415.  
 Bruno, Giordano 13, 16, 19, 38, 90,  
     92, 131, 134, 135, 160, 165, 184,  
     187, 195-97, 200, 203-13, 221,  
     257, 260, 264, 272, 355, 357, 366,  
     369, 373, 376, 466, 495, 505, 537.  
 Bruns, I. 61.  
 Buccaferrea, Ludovico 89, 92, 107,  
     131, 135-41, 157, 159, 193, 241,  
     250, 257, 260, 269, 315, 419, 537.  
 Buchardus, N. 464.  
 Buchdahl, G. 359, 368, 386, 501.  
 Buratelli, Gabriele 185.  
 Burgersdijk, Franco 422-25, 465,  
     513.  
 Burnyeat, M. 8, 140, 407, 501.  
 Buroker, J.V. 359.  
 Burthogge, Richard 251, 414, 497,  
     513-15.  
 Burton, Richard 390.  
 Butler, R.J. 354, 377.  
  
 Caelestinus, Claudius 209.  
 Caietanus (Thomas de Vio) 10, 15,  
     93, 111-27, 153, 155-57, 228,  
     229, 231, 232, 256, 259, 261, 263,  
     267, 275, 278-82, 291, 292, 294,  
     298, 301, 311, 312, 316, 333, 346,  
     374, 381, 446, 448, 452, 453, 494,  
     524.  
 Caietanus de Thiene 52, 117, 137,  
     142, 301.  
 Calcidius 19, 495.  
 Calo Calonymus 145.  
 Campanella, Tommaso 13, 160, 196,  
     197, 200, 214-22, 257, 261, 272,  
     354, 355, 359, 361, 362, 429, 432,  
     444, 524, 525, 538.  
 Camutius, Andrea 187.  
 Cano, Melchior 268.  
 Canone, E. 464.  
 Cardano, Gerolamo 195, 250, 524.  
 Caruso, E. 268, 321, 322, 327, 330,  
     335, 338, 346, 447, 448, 452, 453.  
 Cassirer, E. 11, 46.  
 Castanaeus, Henricus Ludovicus  
     466-68, 472.  
 Castellani, Giulio 8, 143, 144, 159,  
     182, 184-91, 236, 242, 257, 259,  
     263, 305.  
 Castellote, S. 294, 296, 297, 303.  
 Castelvi, Julianus de 326-27, 448.  
 Cavellus, Hugo 341, 348.  
 Cavendish, Ch. 391.  
 Cavini, W. 9.  
 Céard, J. 95.  
 Cesalpino, Andrea 249.  
 Chambre, Marin Cureau de la 455.  
 Chanet, Pierre 455, 458.  
 Chappel, V. 370, 371, 377.  
 Charleton, Walter 496.  
 Charpentier, Jacques 185.  
 Chauvin, Stephanus 470-72.  
 Cherniss, H. 414.  
 Christianson, G. 20.  
 Chrysippus 500.  
 Church, R. 492.  
 Cicero 72, 131, 132, 140, 254, 292,  
     413, 500.  
 Clair, P. 484.  
 Clarke, D.M. 368, 378.  
 Clauberg, Johannes 429, 430, 436-  
     41, 451, 454, 498.  
 Cleanthes 72.  
 Clerc, Jean le 454-55, 470.  
 Collegium Complutense 36, 38, 111,  
     308, 330, 334-37, 342, 344, 346,  
     350, 448.  
 Collegium Conimbricense 17, 49,  
     88, 111, 139, 268, 280, 289-94,  
     312, 333, 342, 344, 354, 423, 448.  
 Collins, A.B. 13, 18.  
 Compton Carleton, Thomas 321,  
     447-48.  
 Connell, D. 476, 478-81, 491.  
 Contarini, Gasparo 10.  
 Cook, J.Th. 445.  
 Cook, M. 362, 365, 368, 370, 371,  
     485, 487, 488, 492.  
 Cooney, B. 441.  
 Coquelle, P.I. 112.  
 Cordemoy, G. de 480.  
 Cornaeus, Melchior 454.  
 Costa, M.J. 370.  
 Costello, W. 391.  
 Cottingham, J. 272, 353.

- Cottunius, Johannes 326-27.  
 Cranz, F.E. 6, 7, 11, 12, 269.  
 Crapulli, G. 353.  
 Cress, D.A. 477.  
 Crockaert, *see* Petrus de Bruxellis  
 Crombie, A.C. 360.  
 Cronin, T.J. 273, 372.  
 Crowley, B. 345.  
 Cudworth, Ralph 497.  
 Cummins, Ph. 501, 504.  
 Curley, E.M. 501.  
 Cusanus 13, 15, 16, 18, 19, 20-28,  
     34, 42, 45, 46, 48, 90, 91, 129,  
     165, 195, 210, 235, 241, 255, 259,  
     261-64, 300, 355, 368, 531, 532,  
     536.  
 Dalbiez, R. 372.  
 Dandinus, Hieronymus 319-31, 325,  
     341, 349, 375.  
 Danto, A. 368, 388.  
 Day, S.J. 341.  
 Dechange, K. 430.  
 Decker, B. 20.  
 De Dijn, H. 429.  
 De Franco, L. 198, 215, 444.  
 Del Noce, A. 487, 491.  
 Democritus 291, 338, 355, 392, 475,  
     501, 509.  
 Descartes 16, 27, 28, 86, 87, 130,  
     143, 173, 184, 188, 196, 198, 213,  
     221, 222, 236, 245, 257, 259, 262,  
     270, 272, 273, 278, 294, 298, 306,  
     307, 311, 317-19, 322, 327, 331,  
     332, 334, 350, 352, 353-91, 393-  
     95, 403-408, 410, 420, 421, 429-  
     32, 434-39, 441, 444-46, 458-60,  
     462, 463, 466, 469, 472, 473, 475,  
     476, 478, 485, 487, 490, 496, 498,  
     501, 508, 512, 518, 524, 525, 529,  
     531, 538-40, 545.  
 Desgabets, Robert 455, 461-63, 484.  
 Detel, W. 413.  
 Deusing, Anton 250, 427-28.  
 Dietrich of Freiberg, *see* Theodoricus  
     Freibergensis  
 Di Napoli, G. 11, 41, 50, 51, 64, 103.  
 Dibon, P. 421, 422, 429, 430, 435.  
 Dieckhöfer, K. 422.  
 Diogenes Laertius 9, 206, 373, 397,  
     404, 413, 414, 500, 501.  
 Dionysius Areopagita 32, 331, 449.  
 Doig, J.C. 372.  
 Dominicus de Flandria 125.  
 Donati, Bernardino 185.  
 Donato, Gerolamo 7.  
 Donnelly, J.P. 294, 421.  
 Dreyfus, G. 476.  
 Dronke, P. 21.  
 Duchesneau, F. 498, 508.  
 Duodo, Pietro [=Francesco  
     Piccolomini] 240.  
 Dupasquier, Sebastian 453.  
 Dupré, L. 20.  
 Durandus de Sancto Porciano 5, 11,  
     16, 78, 87-89, 96, 113, 133, 241,  
     277, 282, 285, 286, 290, 299, 305,  
     323, 324, 327, 343, 409, 416,  
     447-49, 521, 524.  
 Eck, Johannes 19, 129, 130, 133.  
 Eckermann, W. 373.  
 Einarson, B. 400.  
 Ellis, R.L. 195, 390.  
 Emilson, E.K. 359.  
 Empedocles 105, 525.  
 Epicurus 10, 49, 72, 199, 214, 392,  
     397, 404, 405, 409, 410, 413, 414,  
     418, 475, 501, 509.  
 Epstein, W. 273, 362, 367.  
 Erasmus 421.  
 Eschweiler, K. 268, 294, 328, 355.  
 Euclides 174.  
 Eustachius a Sancto Paulo 17, 316-  
     19, 331, 354, 363, 438, 479, 524.  
 Everson, St. 400.  
 Faba, Agostino 6, 142, 245-48, 251,  
     259, 264, 310.  
 Fabro, Philippus 136, 224, 270, 314-  
     16, 350, 495.  
 Faivre, A. 41.  
 Falcón de Givés, C. 311.  
 Faseolo, Giovanni 7.  
 Fattori, M. 352, 464.  
 Fauser, W. 116.  
 Fernel, Jean 325, 428.  
 Ferrara, *see* Sylvestris, Franciscus de

- Ferrater Mora, J. 268, 294, 328, 422.  
 Ficino, Marsilio 9, 12, 13, 15, 16, 18,  
 19, 29, 32-38, 41, 46, 56, 68, 90,  
 129, 134, 151, 157, 170, 195, 197,  
 204, 212, 239, 255, 259, 261, 269,  
 304, 335, 366, 369, 383, 428, 449,  
 466, 495, 523, 536.  
 Filalteo, Lucillo 160, 185, 191-92.  
 Fiorentino, F. 198, 200, 201, 203.  
 Firpo, L. 215.  
 Fodor, J. 389.  
 Fonseca, Petrus de 283, 420.  
 Forge, Louis de la 47, 49, 271, 320,  
 360, 455, 458-61, 471, 498, 525.  
 Foucher, Simon 484.  
 Fracastoro, Girolamo 16, 18, 19, 46-  
 49, 90, 195, 210, 257, 260, 263,  
 292, 299, 314, 392, 412, 459, 512,  
 524, 537, 538.  
 Fredborg, K.M. 510.  
 Frede, M. 388.  
 Friedemann, R. 380.  
 Fromundus, Libertus 446-47, 524.  
 Fuertes Herreros, J.L. 452.  
 Führer, M.L. 20.  
  
 Gabriel a Sancto Vincentio 330, 341,  
 346-48, 350, 448.  
 Gabriel Biel 5, 268, 409, 416, 524.  
 Galama, S.H.M. 421, 435.  
 Galenus 137, 141, 225, 446, 525.  
 Galilei, Galileo 398, 475.  
 Ganault, J. 487.  
 Garber, D. 353, 446.  
 García-Gómez, S.F. 486, 487.  
 Garin, E. 18, 19, 31, 72, 104, 151,  
 178, 215, 239, 240, 241, 324.  
 Gassendi, Pierre 10, 47, 49, 191, 196,  
 199, 202, 214, 221, 222, 229, 241,  
 250, 260, 270-72, 297, 322, 324,  
 327, 332, 352, 355, 358, 359, 366,  
 367, 370, 371, 398, 399, 404-19,  
 422, 423, 429, 430, 433, 458, 463,  
 472, 479, 485, 498, 507, 508, 515,  
 525, 529, 540, 544-45.  
 Gaukroger, St. 358.  
 Gauthier, R.A. 205.  
 Gaza, Th. 6, 151.  
 Gebhardt, C. 442.  
 Geldsetzer, L. 469, 470.  
 Genua, Marcantonio 8, 13, 15, 16,  
 83, 159-60, 164-74, 175, 176,  
 178, 183-85, 197, 225, 240, 257,  
 259, 260-62, 264, 304, 357, 383,  
 384, 461, 475, 532, 537, 539.  
 Gerhardt, C.I. 28, 355, 523.  
 Geulincx, Arnoldus 441.  
 Geyer, B. 415.  
 Giacon, C. 111, 113, 115, 119, 124,  
 269, 282, 294, 301, 303.  
 Gibson, J. 497, 498, 506.  
 Gilbert, W. 355.  
 Gilbert, N.W. 139, 269.  
 Gilbertus Porretanus 142.  
 Gilen, L. 353, 354.  
 Giles of Rome, *see* Aegidius  
 Romanus  
 Gilson, E. 10, 11, 51, 111, 125, 354,  
 355, 363, 372, 376.  
 Ginsberg, M. 492.  
 Girbal, F. 484.  
 Girelli, Hieronymus 5, 11, 14, 19, 94,  
 103, 107, 126, 131, 143-50, 157,  
 226, 229, 257, 261, 263, 335, 344,  
 536.  
 Glauser, R. 487, 518.  
 Glidden, D.K. 49, 413, 414, 418.  
 Glorieux, P. 250.  
 Goclenius, Rudolphus 128, 132, 174,  
 224, 250, 252-54, 464-66, 468,  
 472, 524.  
 Godartus, Petrus 468, 469, 472.  
 Godefridus de Fontibus (Godfrey of  
 Fontaines) 39, 60, 113, 116, 118,  
 126, 154, 189, 190, 244, 299, 301,  
 320, 336, 343, 344, 373, 375, 380,  
 389, 416, 419, 437, 485, 493, 512,  
 539.  
 Goes, Emanuel de 276, 289-93, 304,  
 333.  
 Goorle, David van 421.  
 Gorcy, G. 352.  
 Goudin, Antonius 453.  
 Grabmann, M. 112, 125.  
 Grand, Antonius le 454.  
 Grant, E. 270.  
 Greenlee, D. 504.

- Gregorius Ariminensis 5, 22, 40, 44,  
 61, 87, 99, 100-102, 114, 119,  
 136, 154, 203, 225, 227, 228, 237,  
 263, 291, 293, 295, 307, 320, 322,  
 345, 449, 495, 512, 524.  
 Gregory, T. 405, 406, 413, 415.  
 Grua, G. 524, 526.  
 Gualterus Burley 57, 96, 106, 243,  
 315.  
 Gualterus Chatton 372.  
 Gueroult, M. 368, 442, 475, 476.  
 Guevara, Johannes de 324.  
 Guillelmus de Alvernia 133, 241.  
 Guillelmus de la Mare 250.  
 Guillelmus de Moerbeke 5-8, 32, 37,  
 86, 254.  
 Guillelmus de Ockham 5, 16, 56, 68,  
 74, 75, 80-82, 86, 99, 144, 153,  
 226, 233, 277, 317, 323, 341, 344,  
 348, 372, 373, 389-90, 407, 409,  
 424, 493, 495, 496, 520, 535.  
 Guy, A. 268.  
 Gysi, L. 497.  
  
 Haan, A.A.M. de 421, 427, 428.  
 Hadot, I. 161.  
 Hall, R. 505.  
 Hamel, Johannes Baptista du 436,  
 455, 462-64.  
 Hamerton Kelly, R. 407.  
 Hamesse, J. 14, 413.  
 Hamlyn, D.W. 360, 368, 391.  
 Hankins, J. 32.  
 Happ, W. 21.  
 Harris, J. 527.  
 Hart, A. 369.  
 Hartz, G.A. 526.  
 Hatfield, G.C. 272, 273, 356, 358,  
 362, 367, 368, 388.  
 Hausman, A. 377, 527.  
 Heath, D.D. 195, 390.  
 Heereboord, Adriaan 429-30, 513.  
 Heinekamp, A. 523, 530.  
 Helmont, J. van 430.  
 Henke, N. 24.  
 Henricus Bate 18, 382.  
 Henricus de Gorychem 112.  
 Henricus Goethals a Gandavo 57, 68,  
 74, 122, 127, 147, 152, 167, 175,  
 177, 213, 228, 229, 241, 242, 269,  
 275, 284, 299, 315, 325, 344, 346,  
 364, 373, 411, 412, 416, 419, 448,  
 465, 496, 535.  
 Henry, P. 210.  
 Herbert of Cherbury, Edward Lord  
 390.  
 Hermes Trismegistus 72, 428.  
 Herring, H. 525.  
 Hervaeus Natalis 125, 269, 292, 373.  
 Heymericus de Campo 65, 277, 440.  
 Hicks, R.D. 225.  
 Hobbes, Thomas 49, 196, 200, 221,  
 222, 270-72, 278, 297, 307, 317,  
 322, 327, 331, 334, 352, 358, 370,  
 390-404, 406, 408, 410, 438, 479,  
 483, 498, 503, 507, 515, 539-40,  
 544, 545.  
 Hoenen, M. 277.  
 Hoeres, W. 295, 297, 298, 300, 302,  
 303.  
 Hoffmans, J. 116, 336, 380.  
 Homerus 52, 446.  
 Hooke, Robert 432, 496, 497, 498.  
 Hooker, M. 368, 526.  
 Hugolinus de Urbe Veteris 373.  
 Hundt, Magnus 128.  
 Hunter, G. 527.  
 Hurtadus de Mendoza, Petrus 291,  
 321-23, 326, 327, 335, 344, 448-  
 51, 494, 532.  
 Hutchison, K. 496.  
  
 Iamblichus 175, 214, 446.  
 Inwood, B. 527.  
 Isaac Narbonensis 324.  
 Isendoorn, Gisbertus ab 427.  
 Isolle, J. 458.  
 Izbicki, Th.M. 20.  
 Izquierdo, Sebastian 88, 111, 452.  
  
 Jackson, H. 390.  
 Jackson, R. 500, 504.  
 Jacobelli, J. 29.  
 Jacobus de Placentia 47, 108, 114,  
 152, 155, 156, 297, 324, 373.  
 Jacobus de Viterbio 18, 112, 241,  
 251, 379, 381, 389.  
 Jacquot, J. 395.

- Jansen, B. 26, 228, 295, 327, 335, 385, 456.
- Javelli, Crisostomo 11, 51, 93, 111, 124-28, 229, 241, 259, 292, 316, 411, 420, 465.
- Joannes Bachonus 5, 16, 57, 60, 74, 125, 126, 127, 147, 154, 177, 228, 229, 244, 284, 315, 325, 341, 348, 375, 416, 419, 468, 485, 493, 512.
- Jöcher, Chr.G. 440.
- Johannes a Sancto Thoma 88, 111, 330-34, 438.
- Johannes Buridanus 152, 263, 357, 379, 427, 446, 494, 513.
- Johannes Capreolus 94, 117, 125, 126, 127, 136, 267, 290, 291, 301, 302, 311, 312, 329, 346, 448, 524.
- Johannes Damascenus 72, 449.
- Johannes de Goettingen 116, 125.
- Johannes de Mechlinia 15, 86, 206, 260, 375, 419, 537.
- Johannes de Ripa 76.
- Johannes de Rupella 302, 304, 386, 475, 532, 541.
- Johannes Duns Scotus 5, 16, 63, 70, 82, 85, 89, 97, 99, 107, 120, 122, 126-28, 147-49, 152, 170, 227, 228, 233, 241, 276, 279, 285, 289, 291, 299, 311, 315, 320, 333, 341, 344, 346, 348, 372, 373, 448, 452, 480, 506, 524.
- Johannes Grammaticus Philoponus 8, 151, 174, 191, 296, 428.
- Johannes Jandun 4, 16, 36, 40, 47, 53, 57, 58, 66, 67, 69, 70, 73-76, 78, 82, 83, 85, 88, 97, 99, 104, 106, 107, 112, 126, 142, 145, 147, 152, 160, 166, 171, 228, 230, 237, 241, 251, 252, 285, 288, 292, 301, 325, 379.
- Johannes Parisiensis 412.
- Johannes Peckam 295, 494.
- Johannes Versor 94, 112, 115, 267.
- Johnston, C. 517.
- Jolley, N. 272, 369-71, 378, 476, 480, 481, 488, 528-30.
- Jones, H. 404, 406, 408.
- Jones, R.F. 390.
- Jorna, R. 504.
- Joukovsky, F. 41.
- Jung-Palczewska, E. 220.
- Kal, V. 225.
- Kant, Immanuel 244.
- Keckermannus, Bartholomaeus 421.
- Kennington, R. 442, 530.
- Keppler, Johannes 358.
- Kessler, E. 6, 11, 12, 52, 56, 72, 74, 130, 131, 151, 153, 159, 160, 172, 187, 188, 225, 235, 239-41, 244, 286, 289, 294, 304, 330, 345, 384.
- Kibre, P. 30.
- Kieszkowski, B. 29.
- Koch, J. 21.
- Krakowski, E. 501, 506.
- Kremer, K. 24, 355.
- Kristeller, P.O. 3, 7, 32, 41, 94, 111, 202.
- Kroll, R.W.F. 498.
- Krook, D. 518.
- Krop, H.A. 423, 427.
- Kuksewicz, Z. 78, 108, 114, 116, 125, 373.
- Kulstad, M.A. 530.
- Lacy, Ph.H. de 400.
- Laird, J. 486, 491, 492.
- Lalemandet, Ioannes 136, 224, 343, 451-52, 521.
- Lambertus de Monte 125, 280, 286, 313.
- Land, J.P.N. 441.
- Landes, M.W. 414, 513.
- Landet, P. 250.
- Lando, Bassiano 89, 142-43.
- Larmore, Ch. 362, 365.
- Lattre, A. de 441.
- Lauredano, Polo 237-38.
- Lee, Henry 515, 517.
- Lefèvre d'Étaples, Jacques 6, 38-41, 44, 45, 47, 89, 101, 129, 224, 245, 246, 248, 257, 259, 263, 284, 293, 457, 485, 493-94.
- Leibniz, Gottfried Wilhelm 28, 143, 270, 272, 273, 294, 328, 331, 355, 359, 414, 446, 523-33, 541.
- Lennon, Th.M. 365, 374, 387, 498, 513.

- Lerma, Cosmas de 222.  
 Lerner, M.-P. 215.  
 Leshen, J. 396, 398, 399.  
 Lestienne, H. 523.  
 Leucippus 355.  
 Levi, A. 200.  
 Libera, A. de 277.  
 Licetus, Fortunius 29, 324-26.  
 Liebler, Georgius 134-35, 243.  
 Lindberg, D.C. 210, 509, 510.  
 Lipsius, Justus 131, 254, 414, 421.  
 Lloyd, A.C. 161.  
 Locke, John 143, 191, 259, 270,  
     272, 273, 350, 355, 484, 496-513,  
     515-19, 522, 525, 540-41, 545.  
 Loemker, L.E. 527.  
 Lohr, Ch.H. 3, 9, 72, 269.  
 Long, A.A. 500.  
 Lovejoy, A.O. 492.  
 Lucchetta, F. 10, 76.  
 Lucretius 325, 421, 422, 475, 501.  
 Ludwig, J. 294, 295, 297, 300, 303,  
     304, 385.  
 Lugo, Joannes de 291, 340.  
 Lundberg, M. 297, 303, 304, 386.  
 Luther, Martin 132.  
  
 MacDonald Rose, G. 523.  
 Machamer, P.K. 377, 509, 527.  
 Macintosh, J.J. 273, 359, 360, 496,  
     497.  
 Macpherson, C.B. 393.  
 Macrobius 19, 72, 140.  
 Maggi, Vincenzo 186.  
 Maggìdlo, P.M. 54.  
 Mahoney, E.P. 4, 5, 7, 11, 12, 13,  
     50-54, 59, 72-76, 97, 104, 161,  
     381.  
 Maignan, Emanuel 47, 271, 320,  
     360, 436, 455-58, 461, 471, 477,  
     517, 525, 308.  
 Maitre, Jean Le 76.  
 Malachowski, A.R. 387, 502.  
 Malebranche, Nicholas 224, 270-73,  
     307, 331, 360, 451, 462, 473-92,  
     494-96, 498, 503, 508, 516, 517,  
     525, 528, 529, 531, 532, 540, 545.  
 Malherbe, M. 391, 396.  
 Mandon, L. 409, 415.  
  
 Marcellus, Christophorus 4, 50, 51,  
     67-71, 256.  
 Marcolino, V. 99, 373.  
 Maritain, J. 330.  
 Marmura, M. 483.  
 Marsilius de Inghen 268.  
 Marta, Jacob Antonio 151, 196.  
 Martin, Ch.B. 500.  
 Martinez, Petrus 29, 278-82, 330,  
     350, 374, 448.  
 Mastrius, Bartholomaeus 136, 224,  
     308, 321, 341, 345-46, 404.  
 Mates, B. 526, 528, 530.  
 Matsen, H.S. 56.  
 Mattheus ab Aquasparta 60, 182.  
 Matthews, H.E. 501, 508.  
 Maull, N.L. 358, 365.  
 Maurice of Nassau 421.  
 Mazonius, Jacobus 185.  
 McCracken, Ch.J. 484, 498, 508,  
     515-18.  
 McNair, B.G. 5.  
 McRae, R. 369, 377, 378, 504, 527.  
 Méchoulán, H. 394, 452.  
 Medici, Cosimo de' 32.  
 Meier, M. 383.  
 Meister Eckhart 440.  
 Melanchthon, Philippus 10, 12, 19,  
     130-33, 140, 235, 248, 254, 263,  
     293, 304, 308, 422.  
 Melissus 72.  
 Mercer, Chr. 271, 523.  
 Merinerus, Ioannes 452.  
 Mersenne, Marin 222, 352, 354, 394,  
     398.  
 Meyer, R. 523.  
 Meyering, Th.C. 358, 359, 387.  
 Michaud-Quantin, P. 151.  
 Micraelius, Johannes 468-69, 472.  
 Mignini, F. 444.  
 Miller, C.L. 24.  
 Milton, J.R. 506.  
 Mocenigo, Giovanni 203.  
 Mocenigo, Marc'Antonio 173-78,  
     184, 241, 256, 261.  
 Modrak, D.K. 397.  
 Mojsisch, B. 383.  
 Molina, Ludovicus 288.  
 Moncho, J.R. 216.

- Mondadori, F. 526.  
 Montecatini, Antonio 6, 160, 168,  
 185, 192-95, 257, 260, 419, 537.  
 Moraux, P. 131.  
 Moreau, J. 523.  
 Morra, G. 95.  
 Morris, K.J. 366, 386.  
 Mountain, W.J. 47.  
 Muckle, J.T. 9.  
 Müller, H.J. 113, 268, 282, 294.  
 Mugnai, M. 526.  
 Muller, J.-P. 412.  
 Muñoz Delgado, V. 268.  
 Murcia de la Llana, Franciscus 308-  
 309, 330, 350, 448, 524.  
 Murdoch, J.E. 12, 268, 391, 423.  
  
 Nadler, St. 272, 372, 473, 475, 478,  
 479, 481-84, 487, 488, 490, 491.  
 Naert, E. 524.  
 Napoli, A. 395, 406.  
 Nardi, B. 4, 5, 7, 10, 11, 13, 50, 51,  
 56, 57, 59, 64, 73, 75, 95, 104,  
 111, 125, 126, 136, 140, 142, 159,  
 164, 173, 177, 178, 179, 185, 193,  
 225, 226, 237, 239-41, 243, 245,  
 248, 468.  
 Nathanson, St. 503.  
 Ndiaye, A.R. 473, 487, 489.  
 Nemesius Emesenus 216.  
 Newcastle, William 394.  
 Newton, Isaac 497.  
 Nicole, P. 484, 498.  
 Nidditch, P. H. 497.  
 Nielsen, L. 510.  
 Nifo, Agostino 4, 5, 7, 10, 13-15, 19,  
 39, 45, 50, 51, 53, 58, 71-89, 92-  
 97, 99-101, 106, 110, 118, 126,  
 128, 129, 135, 136, 138, 139, 140,  
 143, 144, 147, 159, 164, 167, 168,  
 184, 189, 191, 206, 214, 223, 232,  
 234, 248, 250, 256, 257, 259, 260,  
 261, 263, 269, 275, 293, 295, 299,  
 305, 312, 315, 318, 320, 335, 342,  
 343, 372, 373, 375, 403, 419, 468,  
 493, 522, 524, 537, 541.  
 Normore, C. 372.  
 Norris, John 515-17.  
 Nowotny, K.A. 128.  
  
 Numenius 72.  
 Nussbaum, M. 388.  
  
 O'Donnell, J.R. 19.  
 Oeing-Hanhoff, L. 355.  
 Oksenberg Rorty, A. 358, 388.  
 Olympiodorus 225.  
 O'Meara, D.J. 7, 8.  
 O'Neill, B.E. 354, 355, 361, 363,  
 372.  
 Oria, Juan de 268.  
 Origines 72.  
 Osler, M.J. 404.  
 Ottaviano, C. 216.  
 Oviedo, Franciscus de 335, 338-39,  
 448.  
 Owens, J. 225, 488.  
  
 Pacchi, A. 391, 392, 398, 399, 498,  
 516, 518.  
 Pachó, J. 368, 369.  
 Pacius, Julius 249, 250, 420.  
 Paganini, G. 406, 409.  
 Pal, R.B. 407.  
 Palacios, Michael de 88, 103, 274-  
 78.  
 Pallavicini, Agostino 309-10, 312,  
 319, 354.  
 Pantin, I. 41.  
 Park, K. 6, 11, 160.  
 Parker, Samuel 414.  
 Parkinson, G.H.R. 369.  
 Parmenides 72.  
 Pascal, Blaise 498.  
 Patar, B. 152.  
 Patrizi, Francesco 19, 197-98, 214,  
 272, 429, 523, 524.  
 Paulus Nicolettus Venetus 40, 47, 87,  
 101, 115, 117, 138, 142, 248, 263,  
 293, 295, 299, 307, 325.  
 Peñafiel, Ildephonsus de 449-51,  
 494, 532.  
 Pera, C. 56.  
 Périon, Joachim 6, 245, 246.  
 Pernumia, Jo. Paulus 248, 249.  
 Petersen, P. 130, 132, 268, 524.  
 Petrella, B. 225.  
 Petrus Aureoli 16, 269, 275, 276,  
 317.

- Petrus de Alliaco 40, 87, 101, 114, 495, 512.  
 Petrus de Bruxellis (Crockaert) 94, 112, 115, 267, 268, 299.  
 Petrus Hispanus 206, 373, 505.  
 Petrus Iohannis Olivi 16, 26, 27, 39, 44, 61, 78, 87, 96, 114, 119, 133, 144, 182, 203, 228, 232, 241, 244, 263, 278, 279, 295, 299, 300, 302, 304, 306, 314, 321, 339, 344, 345, 350, 385, 386, 389, 407, 411, 412, 419, 424, 430, 475, 493, 495, 512, 532, 541.  
 Petrus Lombardus 112, 268.  
 Peynado, Franciscus 453.  
 Phalerus, Demetrius 317.  
 Piccolomini, Francesco 7, 21, 127, 161, 185, 223, 225, 235, 238-45, 246, 248, 249, 251, 258, 260, 261, 269, 297, 315, 346, 368, 410, 419, 420, 423, 428, 439, 464, 465, 524, 537.  
 Pickering, F.R. 80.  
 Pico della Mirandola, Gianfrancesco 9, 18, 140.  
 Pico della Mirandola, Giovanni 5, 7, 12, 13, 14, 18, 19, 29-32, 46, 52, 90, 111, 129, 140, 255, 259, 264, 269, 429, 536.  
 Pinborg, J. 510.  
 Piny, Alexander 453.  
 Plato 12, 18, 21, 28, 32, 37, 44, 52, 54, 68, 72, 80, 89, 113, 130, 134, 140, 161, 174, 179, 192, 193, 195, 214, 243, 291, 309, 338, 361, 366, 369, 383, 396-97, 428, 436, 446, 523, 524, 529, 530, 531.  
 Plotinus 12, 13, 18, 32, 37, 68, 72, 89, 174, 174, 210, 225, 240, 359, 361, 366, 428, 523.  
 Plutarchus 400, 414.  
 Plutarchus Lydus 241.  
 Polo, Antonio 126, 177-78, 184, 260, 369, 495, 537.  
 Pomponazzi, Pietro 5, 11, 14, 19, 50, 53, 58, 64, 71, 78, 93, 94-103, 110, 120, 124, 135, 136, 140, 144, 149, 150, 155, 166, 177, 202, 212, 216, 243, 250, 256, 259, 263, 305, 348, 536.  
 Poncius, Ioannes 88, 139, 319, 321, 341-45, 346, 348, 349, 457, 477, 516.  
 Popkin, R.H. 8, 407.  
 Poppi, A. 3, 5, 10, 11, 12, 51, 76, 93, 95, 96, 97, 100, 102-104, 135, 144, 146, 148-50, 225, 226, 230, 233, 236, 314.  
 Porphyrius 72, 409.  
 Porzio, Simone 8, 14, 49, 94, 143, 144, 150-56, 157, 185, 186, 189, 194, 196, 197, 202, 214, 229, 236, 241, 257, 260, 261, 263, 292, 466, 536.  
 Poser, H. 527.  
 Powicke, F.J. 497.  
 Priscianus Lydus 241, 325.  
 Prins, J. 392, 395, 396, 399.  
 Proclus 174, 214.  
 ps-Plutarchus [=Aetius] 131, 254, 413.  
 Ptolemaeus 72.  
 Puster, R.W. 498.  
 Putnam, H. 389.  
 Quine, W.O. 407.  
 Quiros, Ant. Bernardus de 335, 341, 453.  
 Radner, D. 370, 377, 443, 475, 477, 478, 482, 483, 486, 489, 490.  
 Radulphus Brito 39, 60, 116, 126, 232, 244, 320, 375.  
 Raey, Joannes de 429, 432-34, 436, 454.  
 Ramus, Petrus 429.  
 Randall, J.H. 3, 225.  
 Reid, Thomas 492.  
 Régis, P.-S. 489.  
 Regius, Henricus 355, 377, 429, 430-32, 458, 459.  
 Reif, P. 308.  
 Reisch, George 224, 248.  
 Reiser, B. 330.  
 Rhodes, Georgius de 38, 448, 449.



- Ricardus de Mediavilla 125, 180,  
 182, 189, 251, 269, 281, 291, 305,  
 382.  
 Rice, E. 41.  
 Rieber, R.W. 386.  
 Ringelbergius, Ioachim 421.  
 Robbers, H. 421, 422.  
 Robertus Grosseteste 22, 239, 347,  
 479.  
 Robinet, A. 474, 478, 523-25.  
 Rochot, B. 399, 404, 405.  
 Rodis-Lewis, G. 353, 361, 369, 376,  
 431, 461, 475-78, 486.  
 Roger Bacon 22, 47, 134, 191, 192,  
 209, 210, 226, 292, 347, 363, 392,  
 415, 479, 509-11.  
 Roger Marston 26, 182.  
 Rogers, G.A.J. 392, 497, 498, 501.  
 Rohault, Jean 454.  
 Rohmer, J. 354, 355.  
 Romano, F. 159.  
 Rorty, R. 387.  
 Ros, A. 527.  
 Ross, W.D. 140, 225.  
 Rossi, M.M. 395.  
 Rothschuh, K. 430.  
 Roulier, F. 29.  
 Rubio, Antonio 29, 88, 111, 263,  
 311-14, 319, 322, 333, 336, 343,  
 354, 452, 538.  
 Ryan, A. 392.  
 Ryle, G. 503, 504.  
  
 Sabra, A.I. 509.  
 Sallustius 72.  
 Sambin, P. 52.  
 Sassen, F. 421.  
 Sauss, H.R. 3.  
 Scaino, Antonio 237-38.  
 Scaliger, Julius Caesar 125, 136, 224,  
 250-53, 264, 324, 416, 420, 423,  
 425, 427, 428, 524.  
 Schaller, D. 3.  
 Schegkian, Jacob 8, 133-35.  
 Scherzer, J.A. 468-70, 472.  
 Schiavone, M. 32.  
 Schmalz, T.M. 386, 477.  
  
 Schmitt, Ch.B. 6, 8, 9, 10, 12, 14, 38,  
 130, 140, 186, 190, 224, 248, 249,  
 268, 269, 308, 314, 423, 456, 523.  
 Schoock, Martin 355.  
 Schuhmann, K. 195, 196, 200, 392,  
 394, 396, 406, 483.  
 Sennertus, Daniel 425-27, 513.  
 Seppe, D.L. 357.  
 Sergeant, John 458, 518-22, 541.  
 Sextus Empiricus 8, 9, 68, 80, 101,  
 362, 500, 535.  
 Shapiro, A.E. 496, 497.  
 Shields, A.L. 66, 500.  
 Siger de Brabant 4, 56, 59, 61, 65,  
 67, 373.  
 Simplicius 7, 8, 16, 28, 29, 50, 54,  
 56, 133, 151, 159, 160-69, 171,  
 173, 175, 176, 178, 180-82, 184,  
 185, 191, 193, 237, 239, 241, 242,  
 296, 359, 379, 384, 441.  
 Sinaceur, M.A. 523.  
 Skinner, Q. 6, 38, 224.  
 Skulsky, H. 12, 103.  
 Smith, J.-C. 445.  
 Soares, Franciscus 448.  
 Socrates 72.  
 Soles, D.E. 503, 504.  
 Soncinas, Paulus 292, 448.  
 Soppelsa, M.L. 348.  
 Sorell, T. 271, 396, 404, 523.  
 Soto, Domingo de 268, 282.  
 Southgate, B.C. 518.  
 Spampanato, V. 214.  
 Specht, R. 360, 429, 430, 436, 480.  
 Spedding, J. 195, 390.  
 Spinks, J.S. 456.  
 Spinoza 294, 442-45, 525, 530, 531,  
 545.  
 Spruit, L. 13, 203, 205, 208, 209,  
 415.  
 Stanley, Thomas 498.  
 Steel, C. 7, 161-63, 239.  
 Steiger, R. 26.  
 Stella, P. 373.  
 Stephanus Alexandrinus 8.  
 Stewart, M.A. 251, 500.  
 Stich, St.P. 358, 501.  
 Stoici 49, 109, 130, 134, 195, 199,  
 214, 235, 291, 355, 428, 535.

- Stroud, E.C. 394.  
 Sturlese, R. 187, 203-205.  
 Suarez, Francisco 17, 27, 29, 38, 87,  
   88, 111, 116, 132, 172, 178, 184,  
   235, 245, 262, 263, 268, 274, 286,  
   290, 294-306, 309, 311, 312, 325,  
   328, 330, 332, 333, 336, 337, 340,  
   342, 346, 350, 372, 384, 385, 386,  
   389, 404, 421, 423, 425, 440, 448,  
   452, 457, 461, 463, 464, 475, 480,  
   512, 524, 532, 538, 539, 541.  
 Sylla, E.D. 12, 268, 391, 423.  
 Sylvestris, Franciscus de 15, 27, 93,  
   111, 112, 116, 119-26, 172, 192,  
   256, 259, 267, 282, 292, 302,  
   312-14, 318, 321-23, 333, 346,  
   350, 384, 446, 448, 452.  
  
 Tachau, K.H. 317, 341.  
 Tack, R. 405, 415.  
 Taddheus de Parma 47, 57, 78, 152,  
   155, 231, 297, 305, 310, 426.  
 Taia Pietra, Hieronymus 11, 51, 249.  
 Tannery, P. 353.  
 Tavuzzi, M. 124.  
 Telesio, Bernardino 13, 16, 48, 49,  
   151, 160, 195, 196, 198-203, 214-  
   16, 219, 221, 257, 261, 264, 272,  
   304, 354, 359, 410, 415, 429, 444,  
   524, 525, 538.  
 Tellez, Balthazare 291, 340-41.  
 Themistius 68, 72, 98, 105, 107, 137,  
   141, 145, 151, 167, 168, 177, 242,  
   275, 284, 285, 325, 341, 348, 379,  
   416, 428.  
 Theodoricus Freibergensis 18, 169,  
   170, 175, 184, 277, 382, 495.  
 Theodorus Metochita 72, 140.  
 Theophrastus 106, 107, 175, 177,  
   241, 284, 285, 325, 341, 348.  
 Thierry de Chartes 21.  
 Thomas ab Argentina 336.  
 Thomas Aquinas 5, 16, 18, 27, 29,  
   31, 32, 37, 50, 53-57, 72, 74, 82,  
   89, 93, 94, 97, 98, 111, 114-16,  
   118, 119, 121-28, 149, 152, 160,  
   172, 178, 182, 191, 192, 201, 205,  
   207, 208, 227-29, 233, 237, 238,  
   241, 258, 268, 272, 275-79, 283-  
   85, 288, 291, 292, 295, 301, 302,  
   309, 312, 313, 315, 320, 325, 331,  
   333, 343, 347, 363, 369, 372, 373,  
   379, 411, 411, 419, 426, 465, 479,  
   486, 488, 495, 511, 518, 524, 534.  
 Thomas of Strasbourg, *see* Thomas  
   ab Argentina  
 Thomas Sutton 60, 180, 251, 305,  
   307, 375.  
 Thomas Wilton 40, 87, 101, 263,  
   293, 295.  
 Thorndyke, L. 328, 422.  
 Tignosius, Nicolaus 136, 141-42,  
   260.  
 Tipton, I.C. 501, 504.  
 Titelmannus, Franciscus 224, 248,  
   249.  
 Tönnies, F. 393.  
 Toletus, Franciscus 17, 29, 111, 268,  
   274, 282-87, 288, 294, 295, 311-  
   13, 324, 336, 354, 379, 420, 423,  
   426, 448.  
 Tracy, Th. 225.  
 Trapp, A.D. 99.  
 Trebizond, G. 6.  
 Trombetta, Antonio 11, 75, 76, 104,  
   106, 144, 214.  
 Tuck, R. 392, 394.  
 Turnbull, R.G. 377, 509, 527.  
 Tweedale, M.M. 80.  
  
 Ulricus ab Argentina (Ulrich of  
   Strasbourg) 277.  
 Utermöhler, G. 524.  
  
 Valla, Lorenzo 429.  
 Van de Pitte, F.P. 317, 354, 367,  
   369, 377.  
 Vanni Rovighi, S. 426.  
 Vazquez, Gabriel 288, 448.  
 Velthoven, Th. van 24, 27.  
 Verbeek, Th. 355, 421, 427, 429,  
   431, 432, 436.  
 Verbeke, G. 216.  
 Verhel, Arnoldus 435.  
 Vernia, Nicoletto 4, 5, 7, 10, 13, 37,  
   50, 52-56, 57, 71, 72, 78, 92, 94,  
   110, 128, 159, 166, 184, 191, 223,  
   243.

- Vesey, G. 487.  
 Vickers, B. 390.  
 Victor, J.M. 41.  
 Vimercato, Francesco di 6, 89, 135,  
     136, 139-42, 157, 159, 193, 257,  
     260, 524, 537.  
 Viola, E. 436, 437.  
 Virgilius 52, 421.  
 Vitali, M.C. 140.  
 Vitalis de Furno 116, 121, 124.  
 Vitoria, Francisco de 267, 268.  
 Vives, Juan 429.  
 Voet, Daniel 422.  
 Volckmar, H. 468, 469, 472.  
 Voss, St. 357, 361.  
 Vries, J. de 294, 301.  
 Vrijer, M.J.A. de 430.  
  
 Waard, C. de 222, 422.  
 Wadding, Luke 341.  
 Wagner, H. 368, 476.  
 Wagner, St.J. 364.  
 Wahl, R. 487.  
 Walker, R. 407.  
 Wallace, K.R. 390.  
 Walter Burley, *see* Gualterus Burley  
 Ware, Ch.S. 498.  
 Warner, Walter 391.  
 Watson, R.A. 272, 374, 454, 458,  
     484, 487, 491.  
 Weier, W. 436, 437, 439.  
 Weisheipl, J.A. 5, 201.  
 Weitz, M. 369.  
 Wells, N.J. 372.  
 Wenin, Ch. 4, 75.  
 Whitaker, V.K. 390.  
 White, P.J. 503.  
 White, Thomas 395, 518.  
 Whitmore, P.J.S. 456.  
 Whitmore Jones, H. 395.  
 Wieleman, M.R. 427.  
 Wiesner, J. 14, 454.  
 Wildenberg, Hieronymus 133.  
 Wilkes, K.V. 388.  
  
 Williams, B. 361.  
 Wilpert, P. 20.  
 Wilson, G.A. 386.  
 Wilson, M.D. 359, 386, 442, 530.  
 Wolff, Chr. 268.  
 Wolfson, H.A. 444.  
 Wolicka, E. 330.  
 Woolhouse, R.S. 527.  
 Woozley, A.D. 504.  
 Wulf, M. de 116, 380.  
  
 Xenophanes 72.  
  
 Yolton, J.W. 272, 354, 361, 371, 387,  
     390, 414, 454, 455, 458, 484, 486,  
     498, 500, 502, 504, 513, 515,  
     516-18, 522.  
 Ypma, E. 381, 382.  
  
 Zabarella, Jacopo 8, 11, 21, 49, 59,  
     112, 126, 127, 132, 144, 214, 217,  
     223-36, 237-39, 241, 243, 245,  
     248, 249, 251, 253, 254, 258, 260,  
     263, 269, 279, 287, 293, 295, 297,  
     299, 304, 314-16, 320, 325, 349,  
     368, 374, 375, 411, 420, 422, 423,  
     426, 428, 439, 453, 457, 465, 468,  
     485, 493, 494, 512, 524, 538.  
 Zambelli, P. 128.  
 Zanardus, Michael 309-11.  
 Zarka, Y.-Ch. 391, 394, 395, 398,  
     399, 401.  
 Zasius, Ulrich 129.  
 Zedler, B.H. 145.  
 Zeno 72.  
 Zimara, Marcantonio 4, 11, 14, 19,  
     50, 93, 94, 103-110, 117-20, 135,  
     143-49, 155-57, 164, 177, 178,  
     191, 214, 227, 228, 241, 243, 250,  
     256, 259, 324, 335, 344, 374, 524,  
     536.  
 Zimara, Teofilo 178-84, 261, 304,  
     461, 475, 532.